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THE MARCH OF INDIA

JANUARY 1955 No. 3

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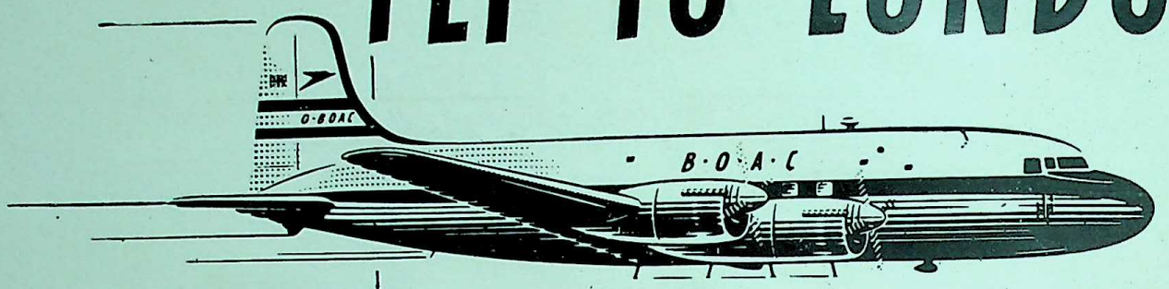

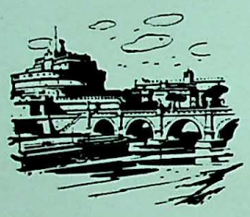

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Announcement

In response to the repeated requests of our esteemed readers we are converting the MARCH OF INDIA into a monthly from January 1955. The first issue will be a special number on Eastern India (priced at Rs. 2-8). Subsequent issues will cost Rs. 1-4 per copy. We shall, however, try to preserve all the special features for which this magazine is well known. In view of the change in frequency it has been possible for us to offer copies at the reduced price and it is hoped that the magazine will now reach a much wider circle of readers.

TO SUBSCRIBERS

Our subscribers will continue to receive copies until such time as their existing subscription expires. The annual subscription will hereafter be Rs. 12 for twelve issues instead of Rs. 15 for six issues as at present.

TO AGENTS

With the conversion of the magazine into a monthly and the reduction in the price, the demand from the Agents is likely to increase considerably. In order to ensure that all our agents obtain the required number of copies, they are requested to inform us immediately of their revised requirements.

TO ADVERTISERS

Notwithstanding the increased frequency, and the anticipated high circulation, we do not propose to increase the existing advertisement rates at present. This, we trust, will ensure added attraction for the advertiser and their space reservation instructions should reach us according to the revised production schedule which can be had on application.

PRICE

Single copy	Rs. 1-4-0	35 cents	2 sh. 6 d.
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Business Manager
PUBLICATIONS DIVISION
DELHI - 8

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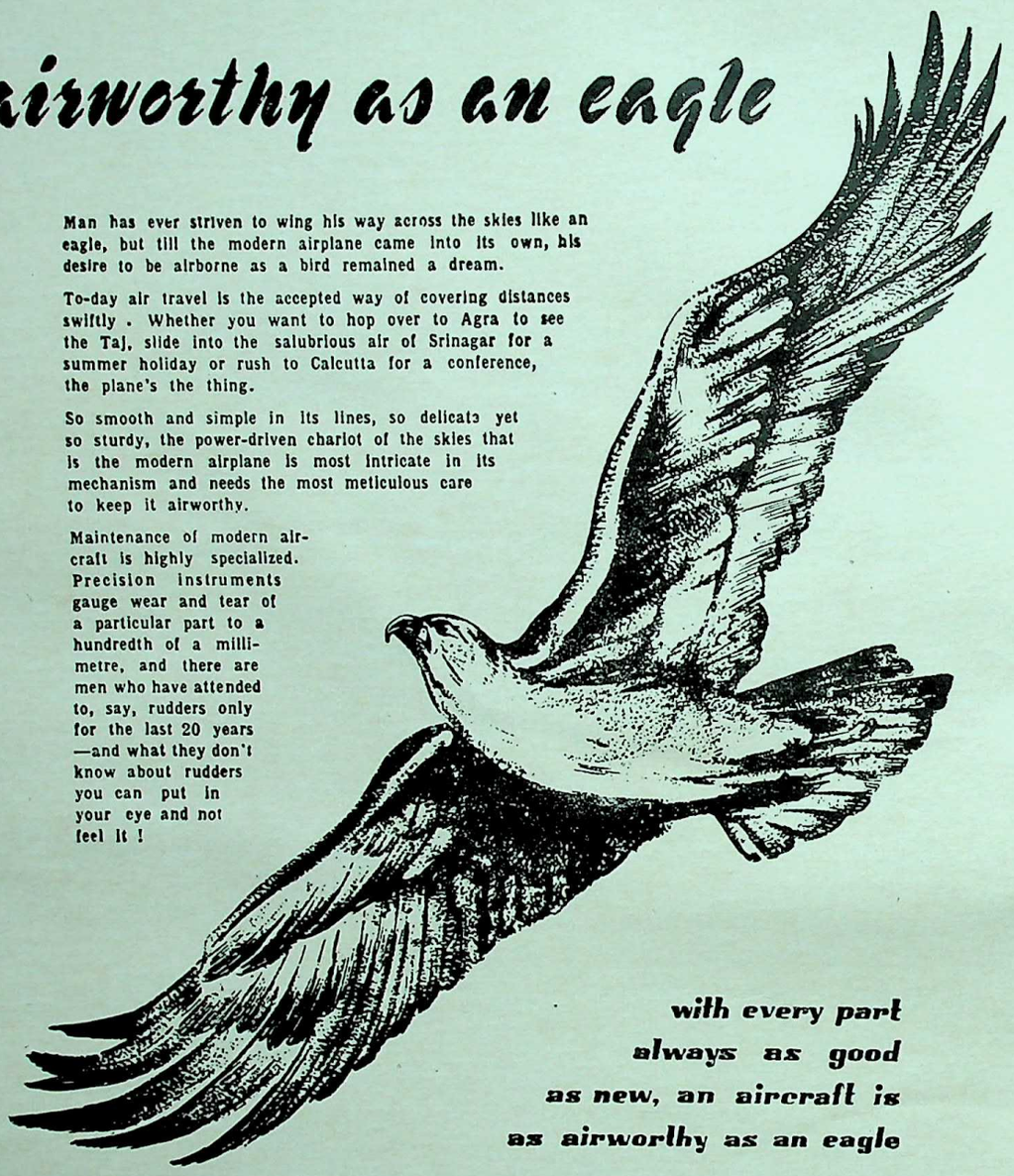
airworthy as an eagle

Man has ever striven to wing his way across the skies like an eagle, but till the modern airplane came into its own, his desire to be airborne as a bird remained a dream.

To-day air travel is the accepted way of covering distances swiftly. Whether you want to hop over to Agra to see the Taj, slide into the salubrious air of Srinagar for a summer holiday or rush to Calcutta for a conference, the plane's the thing.

So smooth and simple in its lines, so delicate yet so sturdy, the power-driven chariot of the skies that is the modern airplane is most intricate in its mechanism and needs the most meticulous care to keep it airworthy.

Maintenance of modern aircraft is highly specialized. Precision instruments gauge wear and tear of a particular part to a hundredth of a millimetre, and there are men who have attended to, say, rudders only for the last 20 years —and what they don't know about rudders you can put in your eye and not feel it!



with every part always as good as new, an aircraft is as airworthy as an eagle

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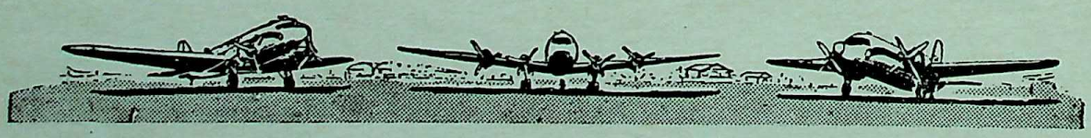

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The MARCH OF INDIA

Vol. VII January 1955 No. 3

EASTERN INDIA NUMBER

In this issue - - -

S. P. Chatterjee	GEOGRAPHY AND GEOLOGY OF EASTERN INDIA	7
S. N. Sen	A HISTORICAL PANORAMA	12
D. Ghosh	PLACES OF INTEREST	15
Suniti Kumar Chatterji	THE LANGUAGES	21
Rajeshwari Prasad	1951 CENSUS	26
A. Percy-Lancaster	EAST INDIAN FLORA	30
Jamal Ara	BIRD-LIFE	33
R. C. Majumdar	THE DEVELOPMENT OF SCIENCE	38
K. K. Sinha	MULTI-PURPOSE RIVER VALLEY PROJECTS	44
Ajit Mookerjee	ARTS AND CRAFTS	49
Dilip Kumar Roy	MUSIC	55
Devaprasad Ghosh	ARTISTIC HERITAGE OF EASTERN INDIA	59
Harekrushna Mahtab	JAGANNATH PURI	65
S. M. Mookerjea	TEA: THE GOLDEN LIQUOR OF INDIA	70
M. C. Mukherji	JUTE INDUSTRY	74
Ashoke Chatterjee	BUSINESS AND INDUSTRY	79
S. K. Dey	DEVELOPING WEST BENGAL	84
Prabodh Chandra Sen	PATRIOTIC SONGS OF BENGAL	89
Ramesh K. Ghoshal	THROUGH OLD CALCUTTA: A SENTIMENTAL JOURNEY	92
S. Dutt	THE UNIVERSITY OF CALCUTTA	96
R. R. Diwakar	BIHAR—ANCIENT AND MODERN	100
Adris Banerji	NALANDA: THE OLDEST UNIVERSITY OF INDIA	107
B. Mukerji	ORISSA	110
T. Kipgen	MANIPUR ON THE MARCH	114
	OUR CONTRIBUTORS	118

The painting on the cover is by Sushil Sarkar, our staff artist, and represents the rich panorama of life in Eastern India. The folk arts and crafts of Bengal, the famous temples of Orissa, the gorgeous costumes of Manipur, the colourful Santhals of Bihar and the sturdy, joyful tribes of the eastern frontier together convey, in colour and line, something of the spirit that invests this part of our country.

Editor:
S. MAN MOHAN

Assistant Editor:
R. N. TREHAN

Illustrated articles, short stories, and features of topical interest or cultural value are invited. All editorial correspondence should be addressed to the Editor, *The March of India*, Publications Division, Old Secretariat, Delhi. Contributions are paid for at our usual rates. The Editor does not hold himself responsible for the views expressed by the contributors.

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Tripura hill girls with rhia *across their bodies*

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Geography and Geology of Eastern India

S. P. Chatterjee

EASTERN INDIA, with its majestic Himalayan ranges, rolling plateaus of Chota Nagpur, extensive river plains of Bihar and West Bengal and picturesque hills and dales of Assam and Orissa, is a dreamland of India.

Its southern shores are washed by the Bay of Bengal, which provides an easy access to the whole of the Ganges Valley by sea. Its northern borders are flanked by the Eastern Himalayas which are clothed with dense vegetation, and are rather difficult to penetrate except at one or two points.

The approach to Mount Everest, the highest peak of the world is, however, through this part of India, and it was a matter of pride for us when Tenzing succeeded in climbing Mount Everest against heavy odds.

Eastern India covers an area of a little over 250,000 sq. miles, and comprises four Part 'A' States—Bihar, Orissa, West Bengal and Assam; two Part 'C' States—Manipur and Tripura. The Himalayan State of Sikkim also forms a part of this region. Eastern India lies roughly between 20° and 28° N. parallels of latitude and between 84° and 96° E. meridians of longitude. The Tropic of Cancer passes through the southern part of Eastern India from east to west, influencing its climate to a very large extent.

Since Eastern India has a common land frontier with Pakistan, Burma and China, including Tibet, its strategic importance needs no emphasis. A part of the international frontier separating Nepal from India also lies in this region, and in fact practically the only outlet from Nepal is through Bihar. Kathmandu, the Capital of Nepal, is connected by road and rail with Raxaul, a border town of Eastern India.

Bhutan, another Himalayan State, lies just north of the Assam Valley, and though politically not a part of Eastern India has many common ties with it.

The Himalayan ranges and spurs cover a pretty large area in the extreme east of Eastern India in the State of Assam. West Bengal includes just a fringe of the Himalayas in Darjeeling district. A few hours motor drive or rail journey from Siliguri takes one to the beautiful town of Darjeeling. The magnificent snow-clad peak of Kanchanjunga is clearly visible from Darjeeling on a clear day.

If one takes the trouble of going to the Tiger Hill, which is very close to Darjeeling, on an early summer morning, he may have a glimpse of Mount Everest with all its splendour at sunrise. In the Darjeeling Himalayan area soft massive sandstones of Tertiary age occur as a narrow band along the foot of the mountain.

Further north there are the Gondwana shales and sandstones and associated with these rocks occur anthracite coal beds, though very much crushed. Bangdogra, the terminus of the airline between Calcutta and Darjeeling has working anthracite coal-mines, the only mines of this kind in India. The sedimentary rocks end abruptly and along with these the low hills come to an end.

All of a sudden appear the steep slopes of the Himalayas composed here of slates, phyllites and quartzites of very ancient age, known as the Daling series. Nearabout Darjeeling very hard gneisses and mica schists predominate. On the way to Kalimpong from Darjeeling via Ghum one can see various rock types of different colour and texture, especially in the valley of the Tista. A thorough prospecting of these hills may lead to the discovery of rich deposits of graphite, coal, iron and copper.

Unlike the Darjeeling Himalaya, the Assam Himalaya is not so easily accessible. This part of the Himalaya is inhabited by tribal peoples who have given their names to the particular sections they live in. For example, the Mishmi hills lie in the upper reach of the Dihang, a tributary of the Brahmaputra, and are inhabited by the Mishmis, who resemble the Mongolians in many racial characters.

The Mishmi hills rise to a height of over 15,000 ft. and are extremely rugged. They are mostly composed of granites and gneisses, and contain valuable minerals, which cannot be exploited for want of roads and other transport facilities.

To the south of the Assam Himalaya lies another rugged mountainous tract. Here the hills run more or less parallel from north to south and alternate with narrow valleys. It is believed that this area was once reduced to the sea beach and again uplifted at the time of the upheaval of the Himalayas. Since the last upheaval, the hills and valleys have been taking their present shape, the ranges being formed of harder rocks and the valleys of softer rocks.

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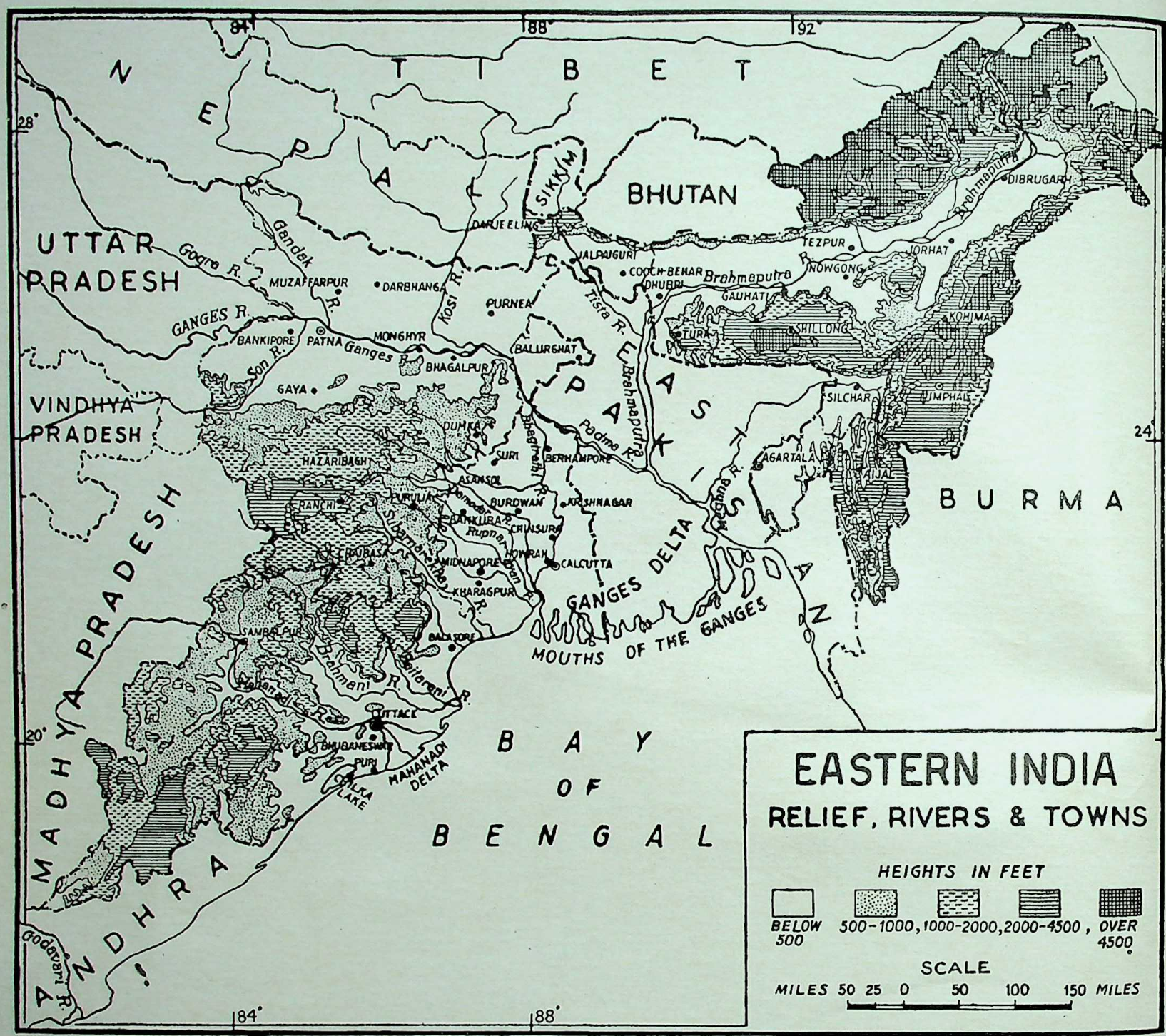

Of the hills in this part of the region, the Naga hills deserve special mention. The hills in the Naga tribal area are much more inaccessible than in the Naga district proper. To one approaching the Naga district from the north, the Barail range has to be crossed by the Kohima road, which runs south to Imphal, Capital of Manipur.

The Naga hills are composed of sandstones and shales of Eocene age. To the south of the Naga hills extend the Lushai hills, which are very picturesque, especially their southern portion, and are known by the name of Blue Mountain.

There is another group of hills and plateaus, which extends from east to west, separating the Brahmaputra valley in the north from the Surma valley in the south. Not much of the Surma valley is now left to India, only the eastern end still forming a part of Assam. The hills in this group are known by the names of Garo, Khasi and Jaintia.

Shillong, the headquarters of the State of Assam, lies in the middle of these hills, and rivals Darjeeling as a hill-station. It is easily accessible by road from Gauhati, the largest town of Assam. There is a regular bus service between Gauhati and Shillong. The road to Shillong from Gauhati runs through open undulating hills and nearer Shillong one can see tree ferns and other types of interesting vegetation.

The pine forests of Shillong add charm to the natural landscape. Shillong abounds with many beautiful waterfalls—the Beadon, the Bishop and the Elephant deserving special mention. The waters of the Beadon falls are utilised for the generation of electricity, which provides power and light to the town.

The greater part of the Khasi hills are composed of older gneisses and schists of Archaean age and on approaching Shillong from the north one comes across softer and younger metamorphic rocks, still retaining some of their original sedimentary character. South of Shillong, the hills become more rounded and near

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Mawphlang on the way to Cherrapunji typical granitic hills rise one after the other almost to the same level.

Further south sandstones and limestones of cretaceous and Eocene age occur on the surface capping the stupendous gorges. One of such deep valleys runs along the motor road right up to Cherrapunji and even a few miles further south, exposing the succession of beds on its slopes.

In this area, there are clear indications of the rejuvenation of valleys, the upper part being of more open type and the lower, veritable gorge. Coal seams occur in Eocene beds and is mined at a number of places in the neighbourhood of Cherrapunji and Laitryngew. Limestones are quarried and are locally used for the manufacture of lime. Of the spots worth a visit in the neighbourhood of Cherrapunji, Mawsmai limestone caves and Mawsmai waterfalls deserve special mention.

The Garo-Khasi-Jaintia hills are separated from the hills and plateaus of the western part of Eastern India by a wide stretch of alluvial plain built up by the joint efforts of the Ganga and the Brahmaputra, aided by a number of their tributaries. It is believed that these were once continuous. At the time of the Himalayan uplift, the central portion subsided and got filled up by sediments in Quaternary times.

On crossing the Ganga from the east by a ferry steamer at Sakrigali Ghat the Rajmahal hills with flat tops and characteristic rocky steps is seen rising abruptly almost from the river bank. The Rajmahal hills are composed of basaltic lava flows, and bear witness to a volcanic activities that occurred long long ago, some time in the Surassic period and must have then covered a much more extensive area in this part of Eastern India.

There were volcanic activities in the Shillong area as well, as lavas of different geological periods are found on valley slopes. The Shillong area is also a region of intense seismic activity. Earthquakes of severe intensity that occurred in the past caused a heavy damage to the urban and rural areas, even changing the long profiles of rivers and destroying older hills or creating new ones.

It is believed that an earthquake of recent date brought about such a drastic change in the river beds that it led to the devastating floods in 1954. Northern Bihar also lies within an intense seismic zones, the epicentres, being in the Nepal Himalaya.

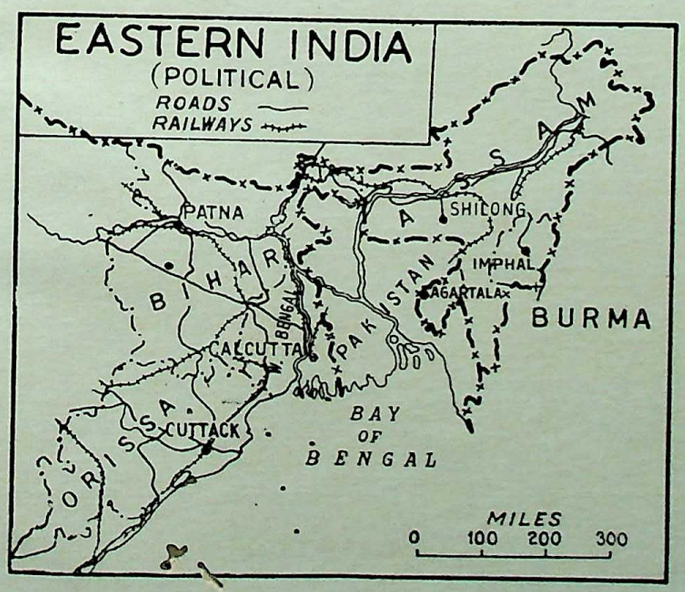
To the east of the Rajmahal hills lies the Chota Nagpur plateau, noted for its landscape and bracing climate. Ranchi and Hazaribagh are the two most important towns of this plateau, the latter being situated at a lower plateau and separated from the higher plateau on which stands Ranchi by a steep escarpment, which is locally known as the "Ghat". Crossing this ghat by a car is a very pleasing experience and one marvels at the natural scenic beauty.

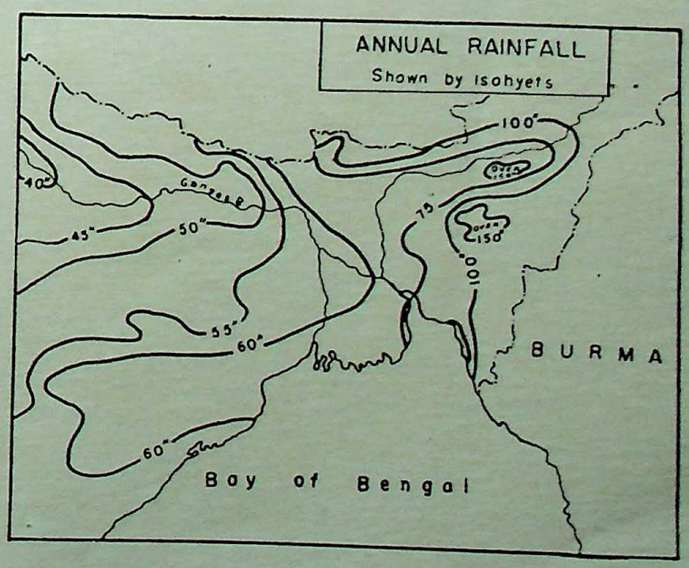
There is another picturesque ghat on the north of the Grand Trunk Road, which one has to cross before going to Rajgir, famous for its Buddhist relics and hot mineralised springs. The road passes through the mica-mining district of Kodarma.

The Topchanchi lake, which is an artificial reservoir for the supply of water to the coal-mining towns of Jharia, is another beauty spot in this part of the country. It lies at the foot of the Parasnath hill and is within easy distance from the Raniganj and Jharia coal-mining areas.

The Chota Nagpur plateau like the Khasi hills is also principally formed of gneisses and granites of Archaean age. The metamorphic effects of the Dharwar age occur in the Singhbhum district of Bihar and in various parts of Orissa. These latter rocks are rich in minerals and contain iron and manganese ores, which are extensively worked for the iron and steel works at Jamshedpur and elsewhere. There are granitic hills as well, which are traversed by pegmatites, rich in mica.

The Gondwana rocks are economically the most important in this part of Eastern India. They lie principally in the Damodar Valley and contain the largest deposits of bituminous coal in India. The Raniganj, Jharia and Bokaro coal-fields are well known as they





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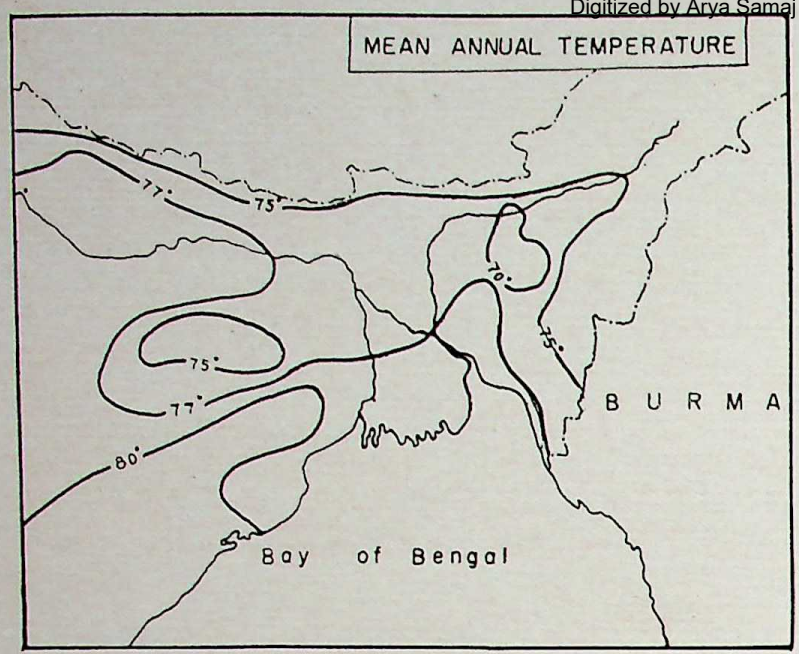

produce over 90 per cent of the total output of coal in India.

Of the hills in Orissa, the one near Bhuvaneswar the Udaygiri-Khandagiri deserve special mention. There are rock-cut images in these hills. The Gurumahisani hill is composed entirely of rich iron ore, and provides this valuable mineral to the Tata Iron and Steel Works.

The plains occupy about 80 million acres of land in Eastern India, the highest coverage of plains amongst the broader regions of India. A belt of older alluvium runs along the foot of the Himalaya extending from the Western Duars to the Terai plains of West Bengal and Bihar. It is in these plains that tea plants thrive, though in the Darjeeling area tea plantations also occur on mountain slopes.

The newer alluvium covers the Assam Valley, greater part of West Bengal and Bihar. These plains, though characteristically flat, have been unequally agraded, with the result that some lie above flood level and others remain below the water-level. This difference in level exerts considerable influence on agriculture, as in West Bengal somewhat higher alluvial lands grow jute and low-lying lands, rice.

Eastern India is watered by the three biggest rivers of India, the Ganga, the Brahmaputra and the Mahanadi. All these have large flows in the wet summer season and periods of low water before the rains set in. The Bhagirathi is the only channel left to West Bengal which receives waters from the Ganga. This channel is of vital importance not only to the State of West Bengal, but also to the whole of India, as on its banks stands Calcutta, the largest port of India.

From the dry weather flow of the river it becomes evident that it is dying in its upper reaches and that the condition of its left-bank feeders, the Bhairab Jalangi and the Matabhanga is no better. Of the rivers flowing east from the Chota Nagpur plateau, the Damodar in floods has been a source of danger to millions of farmers living in its valley and hence it was given the first priority in the multi-purpose schemes undertaken by India in recent years.

The Hirakud project in the Mahanadi valley, when completed, will also benefit thousands of farmers of Orissa. The Kosi river, which is a tributary of the Ganga, needs to be trained, if North Bihar is to prosper agriculturally.

In the plains of Bihar, Orissa, Assam and West Bengal, most of the soils are azonal with little or no profile development. They have been derived from alluvial deposits, forming flood and piedmont plains and deltas; and in most cases they are of the same type of loam. On the basis of texture, they could be divided into sands, sandy loam, river silts or silt loams, clay loam and clays. Pure sands occur mainly along the coast, forming coastal sand dunes. Loamy sands prevail along the northern bank of the Ganga. Alluvial soils along the coast and especially in the Sundarbans area show white efflorescence of sodium chloride, as they are impregnated with this and other salts by tidal estuaries.

There are zonal soils, in the hills and plateaus of Eastern India, rich in sesquioxides of iron and aluminium, poor in silica and alum, devoid of colloidal matter. They are difficult to plough, and their fertility level is at a minimum. Red and yellow podzolic soils

Two Meithei women, Imphal market

An Assamese girl weaving

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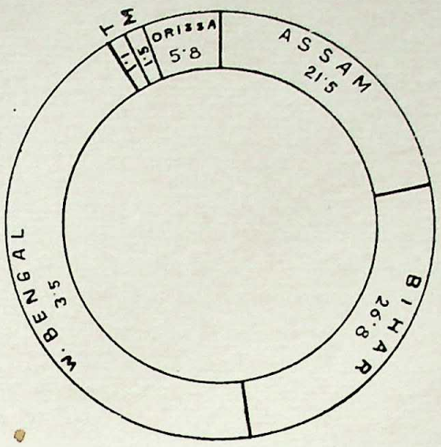
ACREAGE UNDER JUTE



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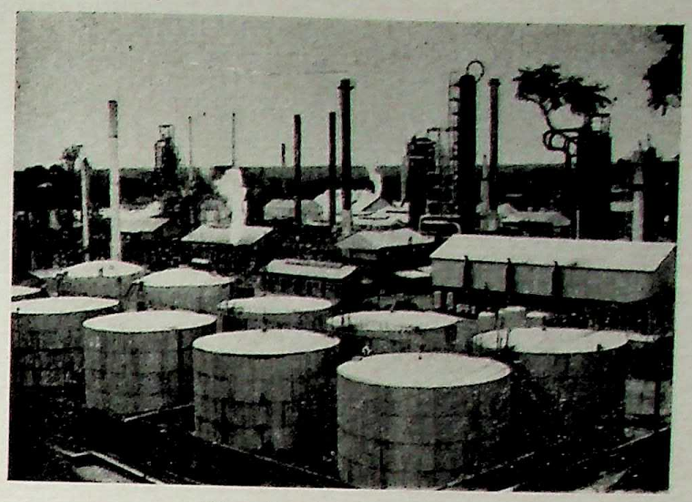


The oil refinery at Digboi

have developed on the gneisses and schists in the higher slopes of the mountain, and humus podzols in the valley bottoms and other depressions.

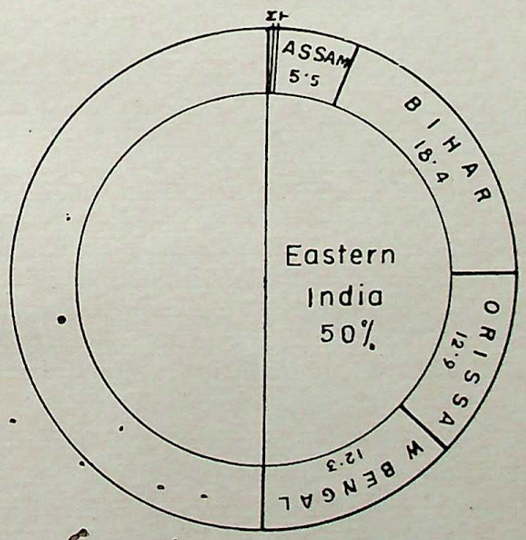
Man has cleared the tropical deciduous forest from the plains of Eastern India to make room for rice fields and wherever land has been kept fallow it has given rise to grass plains. Forests of tropical deciduous type are, however, in strips in the plains, mainly along the river banks. Tree vegetation of luxurious growth is found in the Terai region in the north, and the Sunderbans in the south, and Orissa hills in the south-west.

The forests are of four types: (1) evergreen forests; (2) tropical deciduous forests; (3) mangrove forests; and (4) swamp forests. Evergreen forests predominate where the annual rainfall exceeds 100 inches and the soils are moisture-retaining. The evergreen forests are of two types: temperate evergreen forests and tropical wet evergreen forests.

The moist temperate evergreen forest can be found in the hills and mountains above 5,000 feet. This type is characterised by the extensive development of coniferous forests. Whenever the ranges are exposed on the south, the conifers are replaced by the evergreen oaks.

Tropical wet evergreen forests occur in the submontane tracts in West Bengal and Assam. The plateaus in the west are covered in many parts with low jungle, sometimes quite dense. Mangrove and sundri forests occur in the Sunderbans and West Bengal.

ACREAGE UNDER RICE



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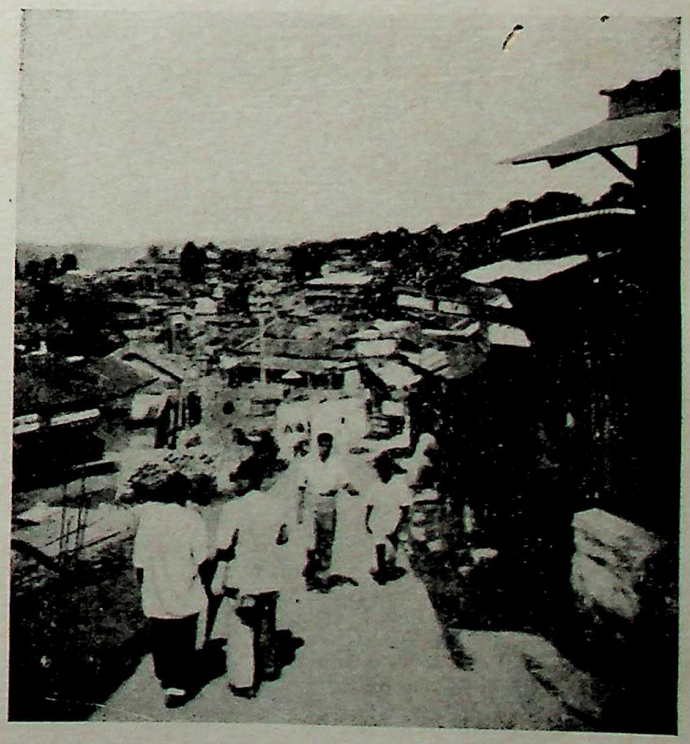
A sloping road in Shillong



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The mean annual temperature in Eastern India ranges between 75° and 80°F. In the Himalayan stations the highest average monthly temperature is experienced in July, and in Darjeeling this is lower than the lowest average monthly temperature recorded in the plains during winter.

Rainfall varies considerably from place to place in Eastern India. It ranges from 40 inches in the west to over 150 inches in the east. Cherrapunji receives on an average 460 inches of rains in a year. It has just been discovered that Mawsmai receives still greater amount of rains. Because of the fact that the sky is overcast with clouds in the Khasi hills for a large number of days in the year, these hills have been named as the Meghalaya, that is, "the abode of clouds."

Agriculturally Eastern India is the most productive area in the country. Practically the whole of Jute cultivated in India comes from this part. Of the Indian output of rice about one-half is produced in this region. Eastern India is also famous as the land of tea.

This region is rich in minerals and produces enormous quantities of coal, petroleum, iron ores, manganese ores and mica.

Eastern India is well-advanced industrially. It holds first place in the production of iron and steel, chemicals, and jute. There is an extreme localisation of large-scale industries along the banks of the Hoogly river, stretching from Tribeni in the north to Birlapur in the south through Calcutta and a large number of other towns. Here are to be found 90 per cent of the Jute mills of India.

With the completion of the D.V.C. project, the Damodar river may make this region as prosperous as the Rhine-Ruhr valley of Germany. In Bihar also, the coal-mine area is being rapidly industrialised, and it is expected that the establishment of the Iron and Steel plant at Rourkela, Orissa, will play a more important part in the economy of the country as a whole.

Eastern India has a population of about 90 million, that is to say one-quarter of the total population of the whole of India. There is a heavy concentration of population in the plains and the hills and mountains are devoid of any habitations.

In the south-western part of Eastern India in the State of Orissa there are three population belts running more or less parallel to the coast. Of these, the eastern coastal belt is the most densely populated, having the largest number of settlements. There are very few settlements in the central belt, because of the rugged relief and dense forests. The western belt occupying the Upper Mahanadi basin provides better site for human settlements and activities, and hence is fairly densely populated.

On a more detailed analysis, it appears that the Chilka coastal region is distinct from the Balasore coastal tract. In the former the settlements have stopped at the margin of a vast marshy land, and any further development of the area must aim at the reclamation of this marshy tract. In the latter the settlements occur in the depression of sand dunes and if this area is to be developed on a planned basis, the advance of sands must be arrested by an afforestation scheme.

☆

A Historical Panorama

S. N. Sen

SIX centuries before Christ a prince left his palace and principality in quest of truth and salvation. He hailed from the region that now goes by the name of Terai but he wandered widely in Magadha, modern Bihar, and spent many years at the capital city of Rajgriha.

Not satisfied with the precepts and practices of contemporary teachers he ultimately went to the banks of the Nairanjana river near Gaya and seated himself on a lonely rock under the spreading branches of a *peepul* tree where he could meditate undisturbed on the problems of life and death, of human sufferings and deliverance therefrom.

It was not long before he attained enlightenment and realised that man cannot escape the consequences of his own deeds by practising austerities or performing meaningless rites. He can release himself from the coil of life and death only by abstaining from all kinds of violence and strictly adhering to truth.

Prince Siddhartha thus became Buddha or the enlightened and started on a long journey to impart the truth to others. He soon found many disciples who carried his message far and wide. Thus did an Indian prince teach his fellowmen to forsake the way of strife and violence and to love all created beings as they would love those nearest and dearest to them.

Buddha was not alone in the field. Among his contemporaries was a fellow traveller, Mahavira, whom

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his disciples loved to designate as the *Jina* or conqueror, for he had conquered the common passions of man. He lived and worked in Bihar and preached non-violence though he did not entirely subscribe to Buddha's philosophy. While Buddhism was destined to be a world religion, Jainism did not find any convert outside the country of its origin.

On one of his many journeys Buddha once arrived at the confluence of the Ganga and Hiranyavaha (Sona) and prophesied the future prosperity and eminence of a city that was to be founded there. Many years after he had gone his way Pataliputra (Patna), the city of flowers as it was otherwise known, came to be the metropolis of the Maurya empire. The founder of the dynasty, if Jaina traditions are to be credited, realised the futility of worldly achievements and gave up his throne to become an anchorite.

His more famous grandson also began his career as a conquering emperor but Asoka early repented his ruthlessness and devoted the rest of his life to the service of men and beasts. He sent preachers to Ceylon and the countries of the Middle East not only to propagate Buddhism but to relieve the sufferings of ailing men and animals.

He inscribed his message on living rocks and monolith pillars so that future generations might derive everlasting benefit from them. The wheel of Dharma which Asoka wrought in stone is now emblazoned on the national banner of the Indian Republic as an emblem of non-violence, love and tolerance.

The Maurya empire rose and fell, the Sungas followed in its wake, then came a horde of foreign invaders to be absorbed in their turn in the indigenous population, northern India later found a supreme overlord in the imperial Guptas, then came the barbarous Huns and they in due course were overthrown but the spiritual life of the country went undisturbed.

A Hindu renaissance took place in the days of the Guptas but Hiuen Tsang, the famous Chinese Master of Law who visited India during the first half of the 7th century, found Buddhism still a living force. He spent many years at the University of Nalanda near Rajgriha, the ancient capital of Magadha.

Richly endowed by generations of munificent princes the University had enlisted a galaxy of erudite professors whose fame for piety and learning had attracted there inquisitive students from Central Asia, Tibet, China, Korea and Japan, for these countries had willingly accepted Buddha's teachings though Buddhism was on the decline in the land of its birth.

It will be futile to expect that all ruling princes who paid their homage to Buddha should renounce war as Asoka had done. Harsha, Hiuen Tsang's friend and patron, had led an expedition to the shores of the Bay of Bengal and threatened violence to Bhaskar Varma when he declined to send the Chinese pilgrim to Kanauj but the rulers and the ruled alike practised tolerance.

The king of Kamrupa, in whose country Buddhism was unknown, was anxious to have its precepts explained and the University of Nalanda never barred its portals against an unbeliever. Foreigners were ever welcome to this seat of learning could they but prove themselves worthy of admission.

It was not in the field of learning alone that the Buddhists excelled. They were the most ardent protagonists of democratic principles in India. In their monasteries important questions were not only decided by vote but ballot was in vogue and the majority view always prevailed. At least once in the history of this region the subjects elected their king.

After the fall of the imperial Guptas Harsha of Kanauj had for a short while played the overlord of Magadha, Vanga, Utkala and Kamrupa. After his death followed disintegration and anarchy. Robber chiefs harried the country and the weak were absolutely at the mercy of the strong.

The common man keenly felt the need of a strong central authority and Gopala, a person of unknown origin, was called to the throne of Vanga (Bengal) by the voice of the people. How the popular will was expressed we do not know. Was Gopala the nominee of the people at large or was he the choice of the military chiefs whose opinion alone counted, is also uncertain.

But petty chieftains sank their personal differences and sacrificed their individual interests at the altar of common weal. Gopala justified the confidence of his subjects and restored peace and order. His grandson Devapala extended his sway over the entire eastern region by subjugating Assam and Orissa while Pala sovereignty was firmly established in Magadha.

The Palas, though mighty warriors, professed Buddha's religion of non-violence and love. They were on friendly terms with their co-religionists of Tibet and the island kingdoms of the Indian ocean. It was during the reign of Nayapala that the famous Buddhist monk Atisa, better known as Dipankara Srijnana, made his journey across the Himalayas to reform the Buddhist Church in Tibet.

The people who had elected a king of their own were not likely to tolerate despotic misrule, and that is how Mahipala II, an unworthy descendant of Gopala, came to grief. It is remarkable that the opposition found its leader not in a high caste official but in a humble fisherman. Divya, the Kaivarta chief, ousted the degenerated Palas and ruled Varendra or North Bengal with distinction and left the government to his nephew Bhima.

The short lived Kaivarta dynasty, however, was ultimately overthown by an energetic Pala prince but the ruling line soon came to an end. By the end of the eleventh century the Senas established themselves in Bengal and it was from them that the Muslims conquered the province.

Bengal proved a source of interminable troubles to the Muslim Sultans of Delhi. The local governors never missed an opportunity of asserting their independence and two Sultans, Ghyasuddin Balban and Ghyasuddin Tughlaq, had to march in person to this distant region to suppress their rebelion.

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During the declining days of the Tughlaqs, however, Bengal ultimately cut loose from the empire. The most illustrious Muslim ruler of Bengal was Hussain Shah who extended his conquests both in the east and south far beyond the geographical boundary of the kingdom.

He dealt even handed justice to all his subjects and contemporary Hindu poets paid eloquent tribute to his greatness and goodness. A junior contemporary of Hussain Shah holds a unique place in the spiritual annals of India. A great exponent of the Bhakti cult, Chaitanya is today venerated by many devout Vaishnavas, as an incarnation of Krishna. His teachings went a long way to remove the rigidity of the caste system and to establish the superiority of devotion over rituals.

Chaitanya taught his disciples, among whom was Prataprudradeva the reigning king of Orissa, to practise humility and non-violence and to treat even the lowliest of living beings with love and kindness. The same doctrines found a powerful advocate in Shankaradeva of Assam but the Chaitanya school of Vaishnavism still predominates in Orissa and Bengal.

When the Lodi ruler of Delhi was defeated by Babar at Panipat, Bengal still continued to be ruled by an independent Muslim dynasty. The great Sher Shah, who began his career as a petty Jagirdar in Bihar, seized the government of that province and subjugated Bengal before he launched his final onslaught on the newly founded Mughal empire.

His triumph over the invaders from Central Asia did not survive him long and Bengal, Bihar and Orissa were ultimately annexed by Akbar. For a while the Hindu and Muslim barons tried to assert their independence but their desultory efforts proved of no avail.

It was with Bengal as his base of operation that Mir Jumla, the viceroy of Akbar's great grandson Aurangzeb, essayed the conquest of Assam. Assam had previously been conquered by the Ahoms, a tribe of Mongolian origin, but they had in course of time adopted Hindu manners and customs and had been completely absorbed in Hindu population. Mir Jumla penetrated far into the country but man and nature combined to baffle his strategy and he returned to Bengal a broken down man to die shortly afterwards.

While Aurangzeb was busy fighting the Marathas, Murshid Kuli Khan, his trusted viceroy, had become for all practical purposes, the independent ruler of Bengal and Orissa. His viceroyalty witnessed the rise of many Hindu zamindar families some of whom still survive.

The Government of Bengal, Bihar and Orissa was seized by Alivardi Khan from Murshid Kuli Khan's grandson Sarfaraz but he was not destined to rule in peace. The Marathas under Raghuji Bhonsla of Nagpur and his general Bhaskar Pandit invaded the country and threatened even the security of Alivardi's capital.

They carried fire and sword far into west and north Bengal, while Orissa lay completely at their mercy. Unable to withstand the strain Alivardi bought peace by the cession of Orissa. Orissa remained under the Maratha rule till it was annexed to the British territories by Lord Wellesley.

If Alivardi lost Orissa to the Marathas, his successor Siraj lost Bengal and Bihar to the East India Company. The Company had its headquarters at Calcutta and enjoyed certain trade privileges under an imperial *firman*. There were other European trading nations operating in Bengal at the time.

The first to arrive were the Portuguese. But their piratical practices drew the wrath of the Emperor and Hughli their stronghold was reduced long before Alivardi's time. Nor did the Dutch of Chinsura and the Danes of Serampore count for much.

The French and the English competed for power and predominance and actively participated in the political intrigues at the court of Murshidabad. Some disgruntled nobles headed by Mir Jafar entered into a league with Clive and Watson with a view to dethroning Sirajuddaulla and the battle of Plassey decided the fate of the twin provinces of Bengal and Bihar.

Mir Jafar became a puppet Nawab and all authority ultimately passed into the hands of the Company. Assam was annexed by the British in the third decade of the last century after it had experienced Burmese conquest.

The British conquest created new problems for the region. Though the Muslim conquerors had come from abroad, their descendants had become true Indians, but the new rulers were foreigners in every sense of the term. Moreover the west had made rapid progress in science and industry and Indians, both Hindus and Muslims, were unfamiliar with their thought and culture.

That foreign domination was unwelcome to many of the leading personalities of those times was obvious but the question was—should they stand sullenly aloof or try to derive what benefit they could from their contact with a western nation. The right lead came from Ram Mohan Roy, in many respects the greatest Indian of the 19th century.

He perceived the advantages of western education and learnt the English language. He was a pioneer in many fields and launched a reform movement which gave a rude shock to the orthodox of all communities. But the result was healthy as he appealed to the head and not to the heart of his people.

After the mutiny the East India Company was relieved of the responsibility of ruling India. Meanwhile the University of Calcutta had been founded and greater knowledge of the history and literature of England had engendered among the newly educated classes a strong spirit of nationalism. The greatest exponent of the new aspirations was the Bengali novelist Bankim Chandra Chatterjee and the political leader of the rising generation was Surendra Nath Banerjee.

It was but natural that the liberal movement should originate in the region that first came into intimate contact with British thought and should reflect the

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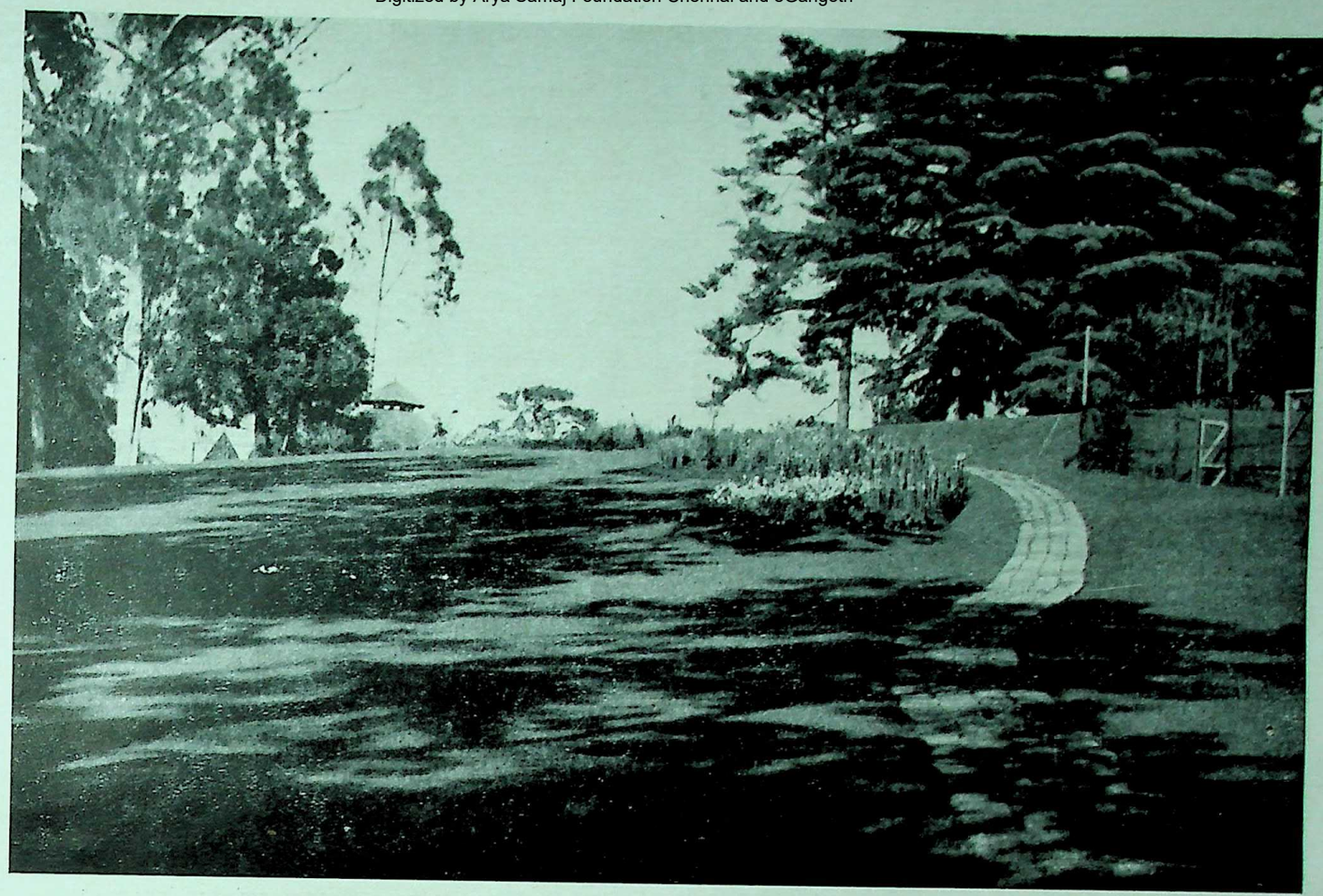

Shillong landscape

Places of Interest

D. Ghosh

A VAST country abounding in natural beauty, India can reasonably be proud of her own peculiar geographical position, being blessed with the world's largest mountain ranges on the north and the mighty seas on the south and the west. Scarcely any other country has such a diversity of attractions to offer to the tourist as does India.

A land of great rivers, Eastern India is blessed with a heavy rainfall. The alluvial plains of this region show mile after mile of rice fields, interspersed with groves of mango and bamboo trees and coconut palms.

The tea plantations of Assam and the jute fields of West Bengal feed that great centre of industry, Calcutta. Rich in coal, iron and mica, Eastern India is gradually becoming the "Rhineland" of India.

Several multi-purpose projects, nearly completed, are expected to bring considerable economic benefits to the people. The most important of these is the Damodar Valley Project modelled on the Tennessee Valley Authority of the U.S.A. This region is also blessed with famous places of Hindu pilgrimage, many-templed Bhubaneswar and Puri, the home of Jagannath.

Calcutta, with the rest of Bengal, felt the first impact of western ideas and culture and this impact manifested itself in various ways. Raja Ram Mohan Roy's new religious system meant an emancipation from the shackles of tradition and made the people receptive to new ideas and thoughts. This system may also be said to have at the root several reformist movements, social, intellectual as well as political.

It was in Calcutta again that the first stirrings of political consciousness were felt and all the movements paved the way for the Congress organisation which played so important a part in the country's liberation. "What Bengal thinks today, India thinks tomorrow", said Gokhale. This eulogy is due to the fact that Calcutta has been the birth place of many an advanced idea in the country.

Calcutta is an important centre, both politically and industrially, which no tourist can afford to miss. For

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A bazaar in Shillong

a tour of Eastern India, every tourist should make Calcutta his centre.

Calcutta is a unique city. To be in Calcutta is to drink at the fountain-head of modern Indian life and culture. The city is not only the synthesis of all the finer aspects of Indian life but a place of universal interest as well. A city of great variety, it satisfies many tastes.

Her great academies of culture, priceless galleries of art and architecture, archives of a rich literature, theatre and music, lively festivals and colourful native customs have not only established her as the jewel of India but a centre of force that moulds the thoughts and activities of the people the world over.

Calcutta has the distinction of having the international airport at Dum Dum where planes to and from all directions of the world pass.

To a foreign tourist, interested in India's ancient archaeology, a visit to the Indian Museum in Calcutta is worthwhile. One of the largest museums in the world, it contains rare collections illustrative of Indian archaeology and natural history, coins and manuscripts, maps, busts, pictures and engravings. The Museum is full of historic collections which illustrate oriental manners and history or elucidate the peculiarities of Art and Nature.

Victoria Memorial, a marble monument erected to the memory of the great British sovereign, is the repository of priceless collections of pictures, statues and historical documents and other objects of art and interest illustrative of Indian history in general and the Victorian era in particular. The spacious grounds around the building are well laid out with exquisite flower beds, wide lawns and gleaming stretches of water, which make it one of Calcutta's beauty spots.

Founded in 1787, the Botanical Garden is situated on the other side of the Hooghly. The garden steadily grew to its unique and unparalleled position as the second largest botanical garden in the world in extent, in the stock of Indian and exotic plants and in its achievements as the centre for the study of the systematic botany of India and the neighbouring countries. It now occupies an area of 273 acres and has a collection of about 16,000 tropical arboreous plants.

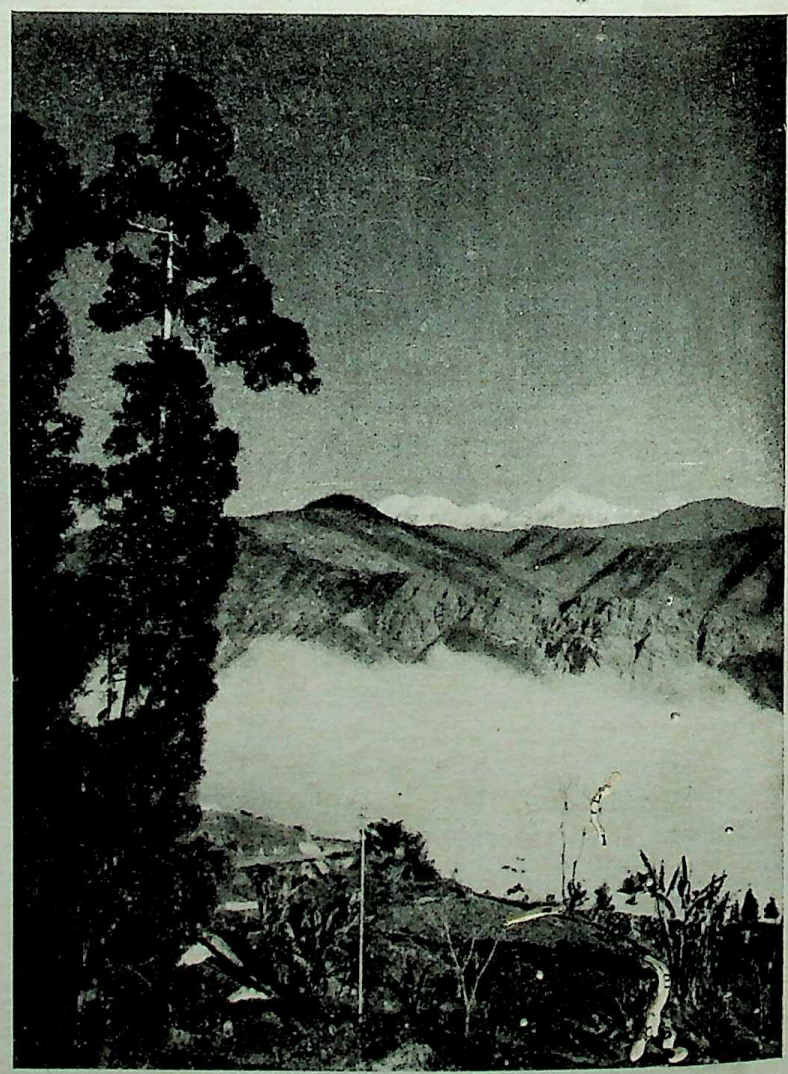
Among the noteworthy objects for the visitors to see is the well-known "Great Banyan Tree"—the pride of the garden—about 200 years old. Its spreading interwoven branches form a leafy canopy overhead and the graceful pillar-like 800 aerial roots cover an area of 133,200 sq. ft. approximately.

The Alipore Zoological Garden is a magnificent institution of its kind covering an area of nearly 48 acres. There are many big and small animal houses, enclosures and aviaries at present, housing a varied collection of popular wild animals, birds and reptiles of the world. The garden also contains rare and original plants, including an excellent collection of varieties of flowering and non-flowering trees. The average number of visitors in a year is 1,800,000.

Other places to visit in Calcutta are the artistic Jain Temple, Kali Temple, Belur Temple and the Dhakuria Lakes. Calcutta provides excellent sports of all kinds throughout the year.

Next in importance from the tourist's point of view is Darjeeling, a charming hill station, about 7,000 feet above sea-level. Situated on a mountain ridge with two projecting spurs, Darjeeling commands one of the most beautiful views in the world—that of a succession of Himalayan ranges culminating in Kanchanjunga (28,146 ft.) with snow-clad peaks on either side, a glit-

The Kanchanjunga range seen from Kalimpong



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The Sun Temple, Konarak, Orissa

tering white wall of perpetual snow. The spirit of the Himalayas can only be found in Darjeeling.

At a distance of about 400 miles from Calcutta, Darjeeling can be approached both by rail and air. The journey takes only five hours to reach Darjeeling from Calcutta.

For a crystal view of the wide snow-capped range of the second highest mountain of the world, Kanchanjunga, Darjeeling is the inevitable choice for all tourists. It is renowned for the grandeur of its natural beauty, transparent in its dappled hills, deep gorges, splashing waterfalls and shadowy meanders and in the sheen of its milky sunshine, with amenities for racing, riding, fishing, trekking, cinemas, clubs and hotels, tourists find this resort a holiday-makers' haven.

When one thinks of Darjeeling one thinks inevitably of natural scenery, for here is a panorama of great beauty, revealing Nature at her best. Almost every mountain range is a hidden paradise of natural charm and grandeur. The hill-people of a bewildering variety with their colourful costumes provide yet another enjoyable diversion.

Representing various races, they throng the weekend bazar with their curios spread before them. Life in Darjeeling is bound to be a most exciting one, for, in addition to the sublime majesty of the Himalayan snows, thrilling excursions, and delightful walks, there are folk evenings where a picturesque assortment of hill tribes display their own colourful dances and shows.

At the Tiger Hill, six miles away, one cannot imagine what a glorious view awaits to greet the splendid vision at sunrise.

Thirty miles away from Darjeeling, there stands a little hill-station, Kalimpong, in a narrow corner where India, Nepal, Bhutan and Sikkim meet beneath the shadows of the Himalayas. It is Bengal's last, but an important trade centre, linking India and Tibet. It is from here that goods, both foreign and Indian, are carried across rugged mountain tracks, through lonely valleys and over precarious highways to the arid tablelands of Central Asia.

Kalimpong is situated at an altitude of 4,000 feet and is remarkable for its landscapes. Such indeed are the variegated and colourful panoramic views that artists and writers have always admired them.

A visit to the bazaar which lies in the heart of the town is worth the trouble and venture. The place is one of Kalimpong's interesting and confounding spotlights.

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The Lloyd Botanical Garden, Darjeeling

Kurseong (4,864 ft.) is another neat hill-station, 19 miles below Darjeeling. Its climate is more temperate and congenial than that of Darjeeling.

Santiniketan, about 100 miles west of Calcutta, the seat of the famous international university known as Visva Bharati founded by Poet Rabindranath Tagore, is the favourite resort of men of letters. Visva Bharati is the culmination of Tagore's dream who wanted to provide a seat of culture which would not only represent the entire cultural heritage of the East but also be a meeting place of all the cultures of the world. The idea was to inspire in the students an awareness of beauty, a hunger for the unseen.

Another attractive hill-station is Shillong in the Khasi and Jaintia hills, the capital of the State of Assam, about seven hours' air-cum-road journey from Calcutta. Shillong is set among the rolling hills and is surrounded by country different from that of the Himalayan resorts. It is a well-planned State capital with good hotels offering racing, golfing and pleasant drives and excursions. The town, built on a hill at an elevation of 4,000 ft., is situated amongst pine woods and has delightful surroundings and charming walks.

Shillong is of particular interest to anthropologists, for, the tribes of Lushais and Nagas dwell in the hills of Assam. Another tribe, the Khasis, hold dance festivals at Nong Kram, only 13 miles from Shillong. A lovely motor road connects Shillong with Cherrapunji, 33 miles away, which holds the record for the highest rainfall in the world. The average annual rainfall is 429 inches.

To tourists interested in seeing wild animals and birds at close quarters in not too thick country, the Kaziranga Game Sanctuary in Assam is an ideal spot. The rhino, wild buffalos, several kinds of deer and many varieties of birds abound in that area.

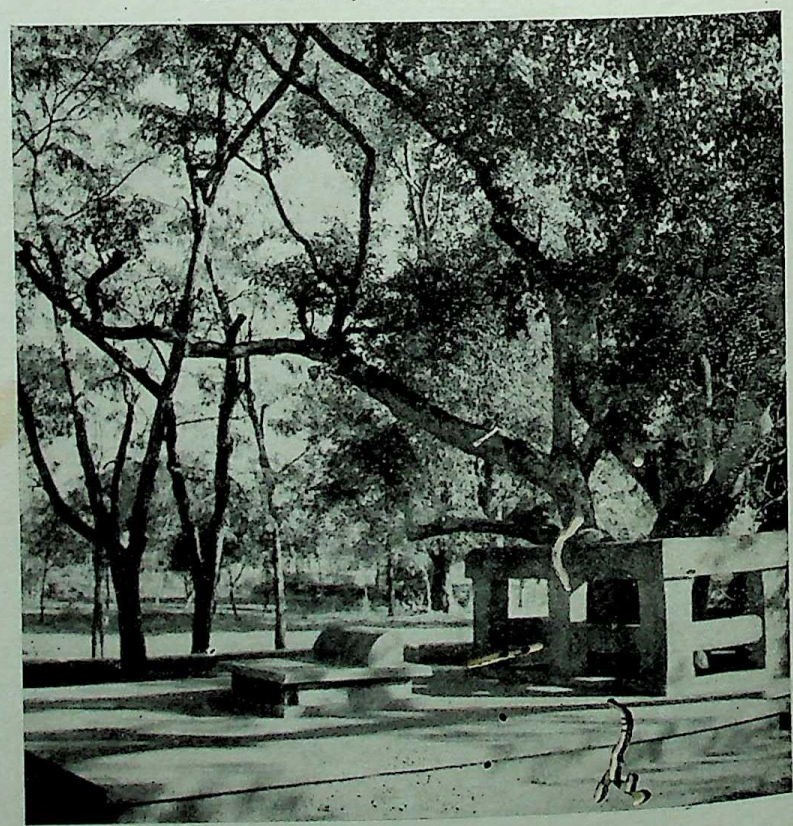
Manipur, in the south-eastern corner of Assam, is a little hill-girt State, now Centrally-administered. Manipur has much to boa t of in the way of arts and crafts—exquisite handloom cloths, delicate embroideries, wicker-work, etc. But it is her special dance tradition, that constitutes her chief title to fame. This dance tradition, unlike almost any other in India, is broad-based on popular practice and not merely confined to a few specialised exponents. Perhaps in no other part of India is the art of dance cultivated so much as in Manipur.

Apart from a lovely and healthy sea resort, Puri is famous for the shrine of Jagannath, 192 ft. high and crowned with Vishnu's wheel and flag. It owes its popularity to the fact that Jagannath is a god of the people and that all are equal in the presence of the "Lord of the World". During the annual car festival the image of Jagannath is taken on a huge car 45 ft. high and 35 ft. square, supported on 16 wheels, seven feet in diameter, from the temple to his country house, dragged with ropes by crowds of frenzied pilgrims eager to gain merit.

Puri has also other charming and attractive corners associated with religion, history and culture. Connected by rail, Puri is about 300 miles from Calcutta. A visit to Puri is certainly not complete without a visit to Bhubaneswar and Konarak, 35 miles and 51 miles away respectively.

Bhubaneswar is known as the temple town of Orissa. Of the temples—once said to number 7,000—scarcely more than 100 remain. They exhibit a variety of architectural types. The finest temples are the great

Under this tree Maharshi Devendranath Tagore attained "Santi." He decided to found here an Ashram which he named "Santiniketan," the abode of peace



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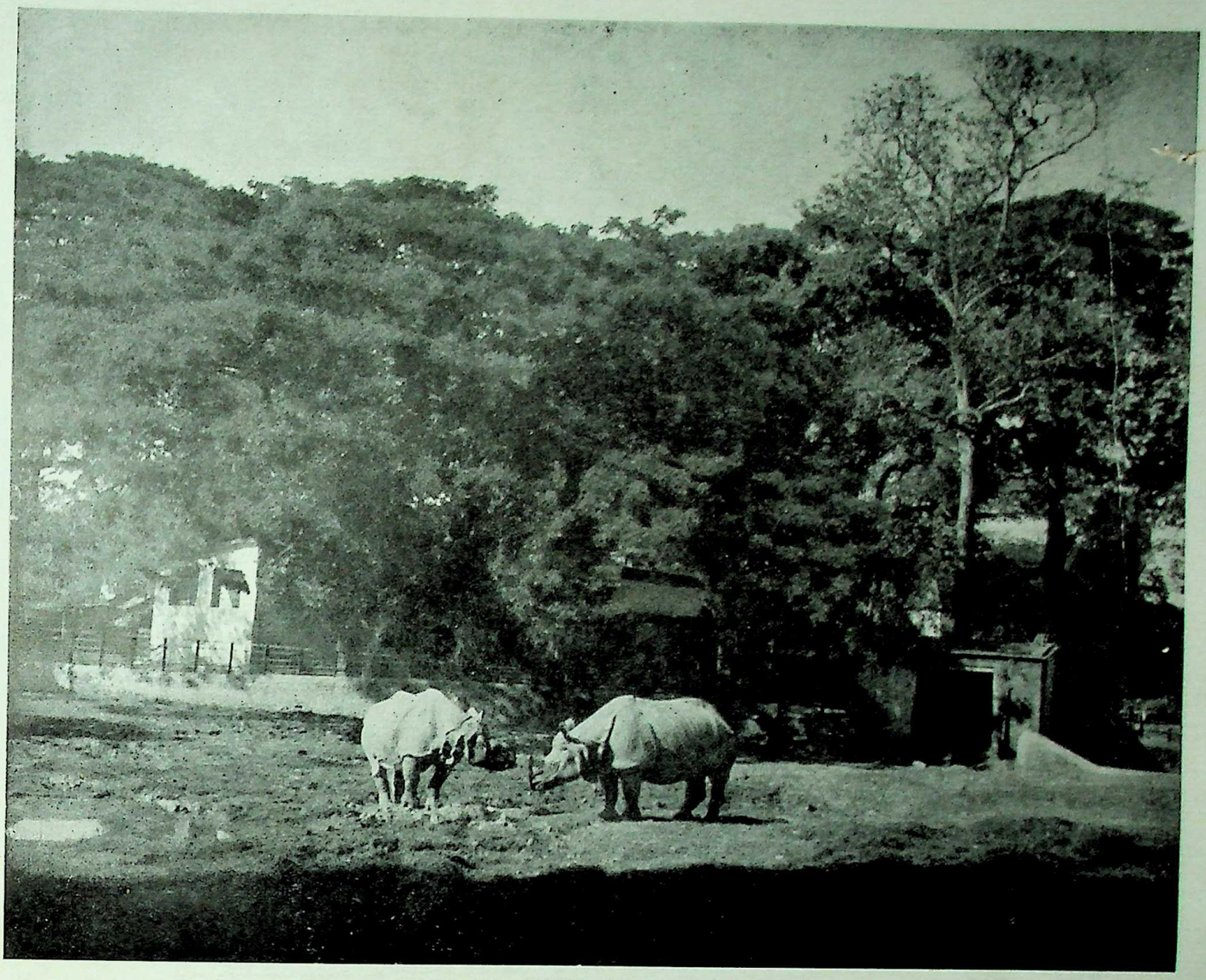

Rhinoceroses, Zoological Gardens, Calcutta

Lingaraj Temple, the temple of Bhagavati, Parbati's temple, Mukteswar, Ananta Basudeva, Bhrahmeswar, Bhaskareswar and the temple of Parasu Rameswar. The temples are of absorbing interest as lasting tributes to the architecture of ancient Indian craftsman. The remarkable carvings of the temples spell enchantment to the foreigner.

On the hills known as Udaygiri and Khandagiri, five miles from Bhubaneswar, are caves, once occupied by monks of the Jain sect, containing very remarkable carvings dating back as early as second century B.C. These caves are famous throughout India and to archaeologists abroad for their wonderful beauty, artistry and sculpture.

Twenty miles north of Puri, along the sea coast, stands the Black Pagoda of Konarak, so-called in contrast to the white temples of Puri. This famous Pagoda, one of the marvels of India, was built by Narasingha Deva I, who ruled Orissa from 1238-1264, in honour of Surya, the Sun God. The structure must have been of colossal size, for the magnificent porch, the only portion now standing in front of the ruined shrine, is so immense as to form a landmark for miles around.

The superb carving of the Black Pagoda is an inspired orgy of sculptural magnificence unique in the world. Exquisite carvings of a Brahmanical type and monumental statutary characterise the Black Pagoda and, owing to the hardness of the stone used, they have been wonderfully preserved. Huge lions, elephants, figures and thrones, scenes of battle and the chase, all are carved with amazing power and skill and with extraordinary inspiration.

The temple is a marvel of Hindu architectural skill and ranks as one of the finest in the world as a symbol of human passion for sheer beauty and creative genius through the ages. Of the Black Pagoda, Sir John Marshall writes: "There is no monument of Hinduism, I think, that is at once so stupendous and so perfectly proportioned".

The Konarak temple is characterised by an overwhelming exuberance of sculptures of every kind. A variety of sculptures and architectural members,

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boldly designed and richly executed, visualise the temple in all its splendour and magnificence. At Konarak the genius of the architect and the sculptor combined to raise a sanctuary in honour of the Sun God. Even in its ruin, it now illumines India and her art shines forth throughout the world as a momentous creation of human endeavour.

Old relics of historical importance can also be found in Vaisali, Nalanda, Rajgir, Gaya and Bodh-Gaya in Bihar.

Bodh-Gaya is probably the holiest of the holy places associated with the life of Lord Buddha, for it was here that Shakyamuni attained Enlightenment and became the Buddha. Bodh-Gaya is seven miles south of Gaya and 292 miles from Calcutta.

Jamshedpur has the largest steel factory in the East. Ranchi is a beautiful hill-station marvelling in natural forest beauty.

Distributed through the central belt of India, the casual observer is bound to come across the ebony-complexioned Santhal and his ox-eyed other half to whom Milton's description "buxom, blithe and debonaire" would fit wonderfully. Their chief habitat is Bihar and Orissa. West Bengal claims them in Bankura and Birbhum. As tea-garden labourers, they are noticed in Assam and they are the backbone of the labour corps of the coal-mines.

There is an abundance of inner joy in the tribe and their artistic tastes, folk songs and dances attract even the casual visitor. Their characteristics vary according to their immediate environments, but beneath those superficial variations there is the rich life of the community.

Eastern India also provides ample scope for hunting big and small games in Assam, Orissa and the Dooars and Cooch Behar districts of West Bengal. The Chilka Lakes provide an ideal spot for bird-shooting and fishing.

The cottage industry products of Eastern India are equally famous. Silver trinkets, Tibetan curios and numerous works of art and craft of Darjeeling and Kalimpong are worth treasuring. West Bengal is famous for silks, ivory products and clay-models. Orissa's brass metal wares, buffalo-horn products, soapstone models and filigree articles are well-known. Manipur's textiles are famous. Calcutta's New Market stores all kinds of fancy goods and curios—"everything from hair-pins to diamond rings, all under one roof".

A HISTORICAL PANORAMA (*Contd. from page* 14)

influence of Mill and Bentham. The study of India's past fostered by western scholars also contributed to national self-consciousness.

But British rulers were reluctant to respond to the demands of self-government and ardent patriots led by Sri Aurobindo resorted to the revolutionary methods of Italian Carbonaries and Russian Nihilists. The revolutionaries tried to exploit the difficulties of the British whenever practicable and although their efforts to organise an armed rising in India during the two world wars did not materialise, Netaji Subhas Chandra Bose actually headed an army of liberation that appeared on the North Eastern Frontiers of India after the collapse of allied resistance in Burma. Armed intervention, however, proved impracticable but the country achieved independence by non-violent non-co-operation under the leadership of Mahatma Gandhi.

The Eastern region that consists of the four States of Assam, Bengal, Bihar and Orissa played a notable part in the history of India. It saw the birth of Buddhism and Jainism, heard Vidyapati sing and Chaitanya preach, nursed the rising national aspirations and finally, when independence was achieved, gave the national anthem to India.

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The Languages

Suniti Kumar Chatterji

IN the matter of language, the States of Eastern India, viz., West Bengal, Orissa, Assam and Bihar, as well as Manipur and Tripura, form in many respects a single unit. In the first instance, all the four great language families of India are represented within this tract of Eastern India. These four linguistic stocks are :

(1) Austric (in its Austro-Asiatic branch)
(2) Sino-Tibetan (mainly in its Tibeto-Burman branch)
(3) Dravidian, and
(4) Indo-Europen (in its Aryan branch)

These four speech families with the people who spoke them were known in ancient India respectively as *Nishada, Kirata, Dravida* and *Arya*. Very few areas in India can show this—the languages of all the four families flourishing side by side, as can Eastern India. The dominant language, of course, is the Aryan.

In Eastern India, we have six great Aryan languages, Bengali, Oriya and Assamese on the one hand, and the so-called Bihari dialects (or, rather, languages) on the other, viz., Bhojpuri, Maithili and Magahi. All these six speeches mark themselves off from the other Aryan speeches current in the rest of India. In spite of a number of differences among themselves, there is a close family resemblance amongst them.

The speeches of "Purab and Bangal", i.e., of the East in general, including Bengal, are differentiated from their cousins and neighbours to the West, as for example the Kosali or Eastern Hindi dialects (Awadhi, Bagheli and Chattisgarhi), Western Hindi (Kanauji, Bundeli, Braj-bhasha, Vernacular Hindusthani, Khariboli Hindi with Urdu, and Bangaru or Jatu), as well as the Rajasthani and Panjabi dialects. The Eastern speeches are also differentiated from their Aryan cousins in the North, namely, the Aryan language of Nepal, called Parbatiya or Gorkhali or Khas-Kura or Nepali.

As has been said above, the languages of India come under four great families. The speakers of two of these, viz., the Austric or *Nishada* and the Sino-Tibetan or "Mongoloid" or *Kirata*, in their totality form a rather insignificant percentage of the people of India.

While for the whole of India-cum-Pakistan 71 per cent of the people speak Aryan languages and 20 per cent Dravidian, the speakers of *Nishada* speeches form only 1.3 per cent of the total population of undivided India and those of the *Kirata* languages only 0.85 per cent.

Most of the speakers of the *Nishada* languages are confined to Eastern India—with the exception of the small Korku tribe, which is confined to Berar and Madhya Pradesh. Similarly the large percentage of *Kirata* speakers—leaving aside Nepal—are confined to the Northern and Eastern portions of Eastern India. In this way, Eastern India may be described as quite a museum of languages. This area can also be looked upon as an epitome of India in this matter.

The various speeches of this part of India may now be described. Exact figures for the Aryan languages of Bihar are not available, the reason will be explained later. As for the other speeches, *Kirata, Nishada* and *Dravida*, we have tolerably reliable figures from the censuses of 1931 and 1941.

The *Nishada* and the *Kirata* speeches represent probably the oldest speech groups in this part of India. Speakers of the *Nishada* or Austric languages (who came to be known to the Aryans in ancient times as *Nishada*) are believed to have arrived in India somewhere in pre-historic times from the West.

They were of medium size, rather dark in colour (and this dark colour is sometimes found as black, which might have been due to their miscegenation with an earlier Negroid stratum in India), with straight hair, long head and rather flat nose.

These Austrics developed their language and culture in India and it is believed that groups of them passed into the lands of the East beyond India, in Burma and Indo-China, Malaya Peninsula and the islands of the Indian Archipelago (Indonesia) and beyond. For linguistic scholars have shown some family resemblances among the languages of Polynesia, Melanesia, Micronesia and Indonesia, the Kol or Munda languages of India and the Mon-Khmer languages of Burma and Indo-China, which all belong to the great Austric family.

The Austrics of India are believed to have gradually spread over the whole of the country, and they were the people who had largely populated the great river valleys of North India, before the Dravidians and the Aryans came. These Austrics gradually merged with the Dravidians and the Aryans, and they together with these people and the *Kiratas* from the East, formed the basis of the present-day population of North India.

In the riverain plains they abandoned their language and took up the Aryan speech. This process commenced from the time of the advent of the Aryans, and is continuing even to our day. Some of the Austrics, who lived a rather primitive life in the hills and forests

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of central and eastern India, remained in isolation, cut off from the general development of civilisation in the Punjab and Gangetic India. There in isolation their descendants have still kept up the old way of life and their language.

In Bihar, to the south of the Ganga and in Orissa, we have remnants of the old Austric languages still spoken by large communities who tend to be more and more bilingual, adding one contiguous Aryan language to their own Austric speech. Until recently they entirely followed their own tribal religion, which contributed elements to popular Hinduism of North India and at the same time was itself modified profoundly by the higher Brahmanical ideas of religion.

At the present day, a good many of them have become Christians through Missionary enterprise—both Roman Catholics and of various Protestant denominations—encouraged by the British during the last 100 years. Nevertheless, they have largely maintained their own languages.

The Austric speeches are generally known in the European Linguistic Science as Munda speeches. The common Indian name for these people is Kol, and this word Kol comes from an earlier form *Kolla* which is looked upon as the Sanskrit rendering of the ancient Kol or Munda word meaning "Man". The Kol peoples, when in their primitive state, are hunters and agriculturists, and today as agricultural labourers owing to pressure of population they have spread over a great part of Bengal, particularly North Bengal and Assam, as well as Orissa.

A large percentage of labourers in the tea gardens of Assam and North Bengal are men and women belonging to the various Kol tribes. Thus from their original *Nidus* in South Bihar, they are now not only concentrated in South Bihar and Orissa and West Bengal, but are also spread over a good part of Eastern India.

Of the Kol tribes, the Santhals form perhaps the largest *Adivasi* or aboriginal tribal groups in India. They number over 2½ million. Their real centre is in Santhal Parganas in Bihar. Next come the Mundas, and their speech, the Mundari, is spoken by over six hundred thousand people; then we have the Hos who are only a little less in number. There are other tribes with smaller numbers, and particularly we have to mention the Juangs or Gadabas as well as the Savaras of Orissa.

The Kol languages go very close to each other, and they represent some remarkable features. Thus, they have a dual number for Nouns and Pronouns, and in the Pronouns they have two types of duals and plurals, e.g., the equivalent for "we" are two-fold : (1) "I, and you", and (2) "I and He or They".

The Kol languages are rather poor in abstract terms, but the speech is picturesque in that they have jingles and onomatopoetics. They have a rich literature of small lyrics (particularly in Santhali and Mundari) which have a distant flavour of their own, besides a large stock of folk-tales and traditions. The Kol speeches were never reduced to writing before Missionaries began to work among the Kols from the second half of the last century.

These languages were first reduced to writing in the local Aryan scripts—Bengali for Santhali, and Nagari for Mundari. At the present moment, through the exertions of the Christian Missionaries, the Roman script has become almost universally accepted for Santhali, particularly after the Scandinavian Missionaries published (from Oslo and Copenhagen) a rich mass of Santhali folk-tales and traditional *Purana* in the Roman script with English translation opposite.

Mundari and other speeches in Bihar generally use the Nagari script. The Oriya script is used to a very limited extent for Santhali. Recently, some patriotic Kols have thought of having a completely new alphabet on the model of the Roman for their languages, and they have published one or two primers in it.

But it is felt that this new movement will not be successful, as it will complicate matters by increasing the confusion already present in India through a Babel of scripts. Some of the Santhali and Mundari lyrics are beautiful in themselves, and they deserve along with some Santhali and Mundari folk-tales an honoured place in the folk-literature of India.

Wherever the Kol and Austric speakers are settled among more advanced Aryan-speaking groups, their gradual merging into the surrounding peoples is inevitable. They are, however, given recognition by the administration. There are Santhali and other *Adivasi* or Tribal Members in the Eastern States Legislatures and one Santhal gentleman is a Minister in the Government of Orissa. They are encouraged to keep their language and traditions, and the University of Calcutta has recognised Santhali as one of the mother-tongues of West Bengal citizens which can be offered at some of the University examinations.

There is another Austric or *Nishada* speech current in Assam, the Khasi, which is mentioned later on.

We should now mention the three Dravidian speeches which are current in Eastern India. These are, Oraon in South Bihar, the language of nearly three-fourth of a million people, Malto in Bihar, to the south of the Ganga in Rajmahal hills, confined to over 70,000 people, and Kandh or Kui, current among over half a million people in Orissa. The Kandhs will have ultimately to merge among the Oriya speakers by whom they are surrounded.

The Oraons are holding their own and they have a cultural life exactly like that of their Kol neighbours, the Mundas and the Santhals. They have also spread in large numbers to North Bengal and Assam as labourers. These three Dravidian speeches, like Gondi and other Dravidian speeches of North and Central India, were never reduced to writing. They are looked upon as uncultivated Dravidian speeches, not at all comparable with the great literary speeches of South India, like Telugu, Kannada, Tamil and Malayalam

We now come to the Sino-Tibetan speeches of Eastern India. Assam is the area where they are largely prevalent. As a matter of fact, the masses of the people in Assam, North Bengal and East Bengal, as in

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Nepal, now speaking the Aryan languages Assamese, Bengali and Nepali, were originally Sino-Tibetan speakers.

The Sino-Tibetan or *Kirata* languages of India fall under several groups, when we take note of their mutual agreements. We have thus the Bodo group, which was at one time current over the whole of the Brahmaputra Valley and a considerable part of North and East Bengal. Now the language is split up into different dialects. Among these we have Kachari both of the hills and the plains in Assam, Garo in the Garo hills, Tipra in Tripura State and the dialects current in Assam Valley and North Bengal, like Chutiya, Rabha, Mech and Koch.

The total number of Bodo speakers may come up to almost a million, but there is no longer any solidarity among them. Some Bodo speakers in Assam, however, have now become conscious of their linguistic and cultural identity, and under the leadership of some educated men of their own community, they have started a "Bodo Movement" in Assam, which includes in its programme, the retention and study of their language and preservation of their folk-lore, dances, art, etc.

Next, in Assam we have the Naga tribes which are related to the Bodos. Naga speech is split up into a number of mutually unintelligible dialects, and they (like Ao, Tangkul, Angami, etc.) are forced to use Assamese or English or Hindi for mutual communication. The Bodo as well as Naga dialects have never been much cultivated, although the Bodos have some romantic folk-tales. There is some literary endeavour in Bodo (Kachari) at the present time and a monthly magazine printed in the Bengali-Assamese script is now being published in Bodo, with essays, stories, poems, notes, etc.

We have to mention the Mikirs in this connection, a small tribe to the south of the Brahmaputra River in the Mikir hills. The Mikir language, though related to both Bodo and Naga, is distinct from either. In North Assam, we have the Abor, Miri, Mishmi, Dafla and other peoples who are all in a very backward condition without any cultural or literary life. They are insignificant numerically.

Another great *Kirata* speech in Eastern India belongs to the Kuki-Chin group which is closely connected with Burmese. There are Kuki tribes in Tripura and Manipur States, and the Manipuri language (called also Meithei) which is spoken by some 300,000 people, belongs to this Kuki-Chin group.

While the other speeches of Kuki-Chin group are uncultivated (Lushai of the Lushai hills is another Kuki-Chin speech), Manipuri has the distinction of being a highly cultivated language. The Manipuri people became Hindus very early and their royal dynasty claims its origin from Arjuna, the Kshatriya hero of the Mahabharata. In the 18th century they accepted Chaitanya Vaishnavism of Bengal. Before 1740, they generally wrote their language in the old Manipuri alphabet, a modification of the Indian alphabet, which they appeared to have received by way of Burma. After 1740, they gradually took over the Bengali script.

In addition to an old traditional literature of ancient mythical stories and historical narratives, Manipuri has now fallen in line with Bengali and other modern Indian languages in having quite a good output of literature of Hindu inspiration, affiliating itself to the Sanskrit world. One Manipuri poet has produced a poem of 38,000 lines on the romantic story of the hero Khamba and the Princess Thoibi, which is the most popular romance—almost the national story—of the Manipuris.

Talking about Assam one has got to mention the Khasi speech, current among some 300,000 people in the Khasi and Jaintia hills. Khasi is not a *Kirata* language but is rather a *Nishada* or Austric language, slightly different from the Kol or Munda speeches. Khasi was written down originally in the Bengali script.

Now a good percentage of the Khasis has become Christian and their language has been romanised by Welsh Missionaries, and the Roman script is now in universal use for Khasi. Khasi has a noteworthy literature of Christian inspiration, besides a good collection of their traditions and folk-lore. It is a language which has been given recognition up to the B.A. stage by the Universities of both Calcutta and Gauhati.

The Aryan languages, of course, are the most important, numerically as well as culturally. It has been mentioned before that in Eastern India there are six great Aryan languages current at the present day. These really are speeches which originated and developed in this part of India. Bihar has a population of over 40 millions and Assam over nine millions.

In Bihar, as said before, three great Aryan languages are spoken, and these are Bhojpuri, Maithili and Magahi. The exact number of people speaking each of these can only be surmised through detailed enquiry, district by distrct. The ruling intelligentsia of Bihar have persuaded themselves to the idea that the above three languages are all "dialects of Hindi," and, therefore, some Bihari politicians declare that Hindi is the language of over 95 per cent of the people of Bihar.

The Maithils, however, do not subscribe to this view and a large percentage of the educated men of Mithila are conscious of the separate entity of their language. Many others, speaking Bhojpuri and Magahi, are of the same opinion. As a matter of fact, Hindi has only within the last two generations become established as the language of education, public life and literary activities in Bihar, and the people of Bihar are now being persuaded to think that the three languages of Bihar are dialects of Hindi, and separate enumeration of Bhojpuri speakers, Maithili speakers and Magahi speakers is not encouraged.

That is why it has not been possible to find out exactly the number of people in Bihar speaking these languages, and the entire population (outside the *Adivasi* or Tribal peoples with their own languages

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of the Austric and Dravidian families) are lumped together as "Hindi-speakers." Sir George Abraham Grierson, the great Administrator and Scholar who was responsible for the *Linguistic Survey of India* (1903-1927), sought to find out by laborious methods the approximate number of speakers of each of these languages.

Roughly, Bhojpuri along with Sadani, a form of it which is current in the Chota Nagpur area of Bihar, is current among over 21 millions of people (this includes a good number of Bhojpuri speakers in the Eastern U.P. districts). Maithili is current among more than 10 millions of people—some ardent advocates of Maithili would put the number at 13 millions or more. And Magahi is current among between six and seven million people in South Bihar.

At the present day, these languages, excepting for Maithili and to some extent Bhojpuri, have no literary life, although there have been protests from Maithili speakers against the present situation. These three languages differ in some fundamental matters from Hindi and Urdu, although educated people of Bihar trained in English schools have for the past three generations been studying first only Urdu and latterly Hindi. On the other hand, these three speeches of Bihar agree in some vital matters with Bengali, Oriya and Assamese.

Thus, in all these six languages, the sense of gender is very weak, unlike what we see in Hindi and Urdu. Unlike Hindi and Urdu, there are no oblique forms for the declination of the Noun (thus Hindi has *ghora*—"horse" in the nominative, but the genitive is *ghore-ka*, whereas in Bhojpuri it is *ghora-ke*, in Maithili it is *ghorak*, in Bengali it is *ghora-r* and in Oriya *ghora-ra*). In Hindi and Urdu the forms are *mera, tera*="my, thine," whereas in the Eastern languages it is "*mor, tor*".

In all these Eastern languages, the past is indicated by an affix with *l* in it, and the future by an affix with *b* in it, whereas it is quite different in Hindi and Urdu. Thus in Hindi, it is *usne dekha*—"he saw," and *wah dakhega*—"he will see," but in Bhojpuri it is *u dekhal*, in Bengali *se dakhila*, in Oriya *se dekhila* and in Assamese *si dehile*; and in the future, in Bhojpuri it is *u dekhab*, in Bengali *se dekhibe*, in Oriya *se dekhiba*, etc.

Then, again, the situation in Hindi and Urdu, that in the past tense, the intransitive verb is an adjective qualifying the subject and the transitive verb is an adjective qualifying the object, changing according to the gender and number of the subject or object as the case may be, is unknown in the Eastern languages.

There is also a very substantial agreement in the vocabulary of current folk words among these three languages. Although the three eastern-most languages, Bengali, Oriya and Assamese on the one hand and the three speeches of Bihar, Bhojpuri, Maithili and Magahi on the other, are ultimately derived from Magadhi Apabhramsa as current in Eastern India between 600 to 1000 A.D. and on the earlier Magadhi Prakrit, during the last 1,000 years, after their formation they have proceeded along their own lines of progress. Further, in modern times Bhojpuri, Magahi and Maithili speakers have come under the spell of Hindi.

Maithili has been, right up to now, an independent language with a literature of its own and a script which was peculiar to itself, but now the script is not much used and most of the Maithili literature printed today is in the Nagari script, although a fount of the Maithili script is available.

Mithila gave a number of very eminent poets and writers to New Indo-Aryan literature, and one of these poets, Vidyapati (c. 1400 A.D.), exerted a tremendous influence on the development of the Vaishnava lyric poetry in Bengal, as well as in Assam, and partly in Orissa. Imitation of Vidyapati's poems in their original Maithili language gave rise to a special poetic dialect not only in Bengal, but also in Orissa and Assam, to which the name *Braja-buli* has been given in Bengal and *Brajawali* in Assam. This is a mixture of Maithili and Bengali or Maithili and Assamese, as the case may be.

Vidyapati was claimed to be a poet of Bengal also, and now he has been affiliated to "Hindi literature" as a poet of Hindi as well, with a rather naive sobriquet, *Maithila Kokila* or "the Cuckoo of Mithila". Mithila produced a large number of Sanskrit scholars, and in spite of their eminence in Sanskrit, they have always cultivated (until recently) their mother tongue.

A fairly detailed two-volume History of Maithili Literature has been published in English by Prof. Jayakanta Misra of Allahabad University. There is now a considerable amount of literary life in Maithili, and books of poems, essays, short stories and novels keep appearing.

Bhojpuri cannot boast of so much literary prominence as Maithili, but it has been found out that the greatest mystic poet of mediaeval North India, Kabir, who was a resident of Banaras, used in his compositions his own Bhojpuri speech, in addition to the Western languages, Braj-bhasha mixed with Awadhi and Khariboli of Delhi. Quite a respectable number of Bhojpuri poems of Kabir going back to the 15th-16th Centuries have been found. There were other poets also in Bhojpuri, but not so eminent, in the subsequent centuries.

The leaders of the Bhojpuri people were Sanskrit scholars of Banaras, and they did not cultivate much their mother-tongue, unlike the Maithil *pandits*. But on the countryside, the sturdy Bhojpuri peasantry never forgot or neglected their language, and as a result we have a very remarkable literature of songs and lyrics in Bhojpuri dealing with love, with family life, with topical events and with romantic themes. These have been published in cheap editions, books selling for a few coppers, and they are immensely popular among the Bhojpuri speaking masses.

Recently, a Bhojpuri poet has composed a cycle of songs and poems in the form of a drama, known as the *Bidesiya Natak*, which describes the pangs of separation from which a young wife suffered while

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her husband was away in Calcutta to earn his livelihood.

Ultimately, after scenes of intriguing events the young couple are united. This drama goes on for nights and draws large crowds of Bhojpuri people wherever it is performed, in the Bhojpuri tract itself, or in Calcutta and other places in Bengal, where there are Bhojpuris.

Recently some Bhojpuri writers like the eminent scholar, Sri Rahul Sankrityayana, have tried to create a new literature in Bhojpuri; and a high class monthly journal (the Bhojpuri) devoted to the study and propagation of Bhojpuri is now coming out regularly for more than a year with literary, political and other kinds of articles, stories and novels, poems, and topical notes, etc.

Magahi is current among not more than seven millions of people in South Bihar, and the Magahi speakers are just now coming to feel some interest in their language. There is a mass of Magahi literature of the usual type found in any Indian language—versions of the *Ramayana* and songs and ballads, almost entirely in manuscript form.

The late Jainath Pati of Nawada published two short stories in Magahi. A society for the preservation and study of Magahi has been recently started in Patna. Magahi has not been studied properly except for the work done on it by Sir George Grierson. Unlike the work of Dr. Subhadra Jha on the History of Maithili as a language (now in print) and that of Dr Udai Narayan Tiwari for Bhojpuri (his great work in Hindi on the History of Bhojpuri is already out, and the English version of it is in the press), no serious attempt has as yet been made by any Magahi scholar to study the language scientifically.

Next, we come to the three Eastern languages of the same group, viz., Bengali, Oriya and Assamese. Oriya is current among over 11 million people. It is a language with a very voluminous literature going back to the 13th century, although specimens of Oriya are also found in earlier inscriptions. It is the most archaic of these Eastern languages—what Old Bengali and Old Maithili were like, could to some extent be guessed from Oriya.

There are a number of Oriya inscriptions of the 15th-16th centuries. The great period of Oriya literature started from the 15th century, when we have Jagannath Dasa who rendered the Bhagavata Purana into Oriya. After him we have a galaxy of writers in Oriya. In the 17th century, in the compositions of Upendra Bhanja and his successors, the Oriya language exhausted so to say all the possibilities of the vocabulary of Sanskrit for literary embellishment.

The style of these poets was refined, no doubt, but they represented the high water-mark of a very detailed and intricate study of Sanskrit and certainly a highly artificial application of it for poetic purposes. After 1850, the modern age for Oriya literature dawned, and we have great names like those of Radhanath Roy, Fakir Mohan Senapati and others.

There has been a very close agreement between Oriya and Bengali in their literary diction and style, both in prose and poetry. At the present moment Oriya has been declared by the State Legislature of Orissa to be the language of administration in the State, and the Utkal University is giving a great impetus to the study of this language and for the development of its literature.

Bengali is the language of over 60 million peoples and although less than half of this number is in West Bengal, there is identity of speech and culture which links up West Bengal in India with East Bengal in Pakistan. The whole of the Bengali people inherit a common literature which is one of the most significant in modern India.

Bengali literature started with some songs and poems of late Buddhist mystic inspiration, going back to the 10th century A.D., and throughout the centuries after that there has been unabated literary endeavour in Bengali. The first great poets of Bengal were Chandidasa and Krittivasa, who were predecessors of Chaitanya.

After the advent of Chaitanya (1485-1533), the great religious reformer and Vaishnava mystic and saint of Eastern India, Bengali literature entered into its most glorious phase in pre-British times. It is not necessary to mention the outstanding works of Bengali during the mediaeval age. A literature of Muslim inspiration but written in pure Bengali came into being from the 17th century onward in Chittagong and in Arakan through the efforts of a number of Muslim poets of Bengal.

Bengali literature has a number of poems relating to the romantic and religious legends of Bengal, e.g., the story of Behula, the chaste wife who brought back her husband Lakhindhar to life after his death from snake-bite, the story of Kalaketu, the hunter, and his wife Phullara, the story of the merchant Dhanapati and his son Srimanta and their adventures, and the story of Lau-Sen, the hero of pre-Muslim Bengal and his wars and other adventures. These form a very distinctive thing in the literature of early Bengal. The Bengali Vaishnava lyrics and a number of romantic ballads are other special things in the earlier literature.

After the establishment of the British in Bengal, Bengali as a language came in touch with English, and as a result, a veritable renaissance took place for the intellect of Bengal. A number of very eminent writers who were leaders of thought, not only for Bengal but for the whole of India, expressed themselves through the Bengali language—beginning with Raja Ram Mohun Roy (1771-1833), who is known as "the Father of Modern India", Iswar Chandra Vidyasagar (1820-1894), the educationist and social reformer, Michael Madhusudan Dutt (died 1873), the great poet who emancipated Bengali poetry both in verse form and content and linked it up with the poetry of the West, Bankim Chandra Chatterji, the great Novelist and thought leader, Bhudev Mukherji, the essayist, Swami Vivekananda, the prophet of resurgent Hinduism and, above all, Rabindranath Tagore.

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The emancipation of the Indian mind through literature started in Bengal through these writers, and the galaxy of eminent novelists and other writers at the present day, including among other names that of the illustrious Sarat Chandra Chatterji, still holds the torch in India for rational thinking through literature.

Assamese as a language is very close to Bengali, but Assam has had its separate political and cultural life and its literature also developed a special Assamese character. Apart from the literature of the common Indian type, consisting of adaptations of the *Ramayana* and the *Mahabharata* and Puranic stories, Assam developed a historical literature based on the histories in the Ahom language (under the inspiration of the Ahom kings and nobility who ruled over Assam from 1228-1826). In Sankaradeva (15th-16th century), who was the great religious reformer and poet of mediaeval Assam, we have a renaissance of Assamese literature in the 15th century.

From the second half of the 19th century, the modernisation of Assamese literature started through its contact with both English and Bengali literatures, and among the great names of modern Assamese literature one has to mention that of the late Lakshmikanta Bez Barua, who was prominent as an essayist and poet.

Assamese, Oriya and Bengali are sister languages which are now going hand in hand in matters of literature, and they represent along with Maithili, in so far as it is cultivated, the best achievements of the Eastern peoples in literature at the present day.

Of course, there is the cultivation of Hindi in Bihar by Maithili, Bhojpuri as well as Magahi speakers and by writers from Uttar Pradesh and other States settled or sojourning in Bihar. Bihar has given some eminent writers to the present-day Hindi literature, like Sri Ramdhari Singh, the poet (whose sobriquet is 'Dinkar') whose own language is Maithili, and Sri Ram Briksha Benipuri and others. But that should come under a survey of Modern Hindi literature.

1951 Census

Rajeshwari Prasad

IT is proposed to examine in this article* some of the important characteristics of the population of Eastern India comprising the States of Assam, Manipur, Tripura, West Bengal, Bihar and Orissa. Of these Manipur and Tripura are two small States on the east and south-west of Assam and may be treated for demographic purposes as part of Assam.

Extensive territorial changes have taken place in this part of India following the achievement of Independence and partition of the country. Assam has lost nearly the whole district of Sylhet to Pakistan. West Bengal has been carved out of the former province of Bengal and represents only 38 per cent of its area.

The princely States have been merged into the adjoining States. While their merger has not caused any large change in the States of Assam, West Bengal and Bihar, it has nearly doubled the size of the former province of Orissa from 32,000 sq. miles to 60,000 sq. miles.

Area, Population and Density

The area, population and density of these States in 1951 was as follows:

	West Bengal	Bihar	Orissa	Assam	Manipur	Tripura
Area (in thousand sq. miles)	30.8	70.3	60.1	85.0	8.6	4.0
Population (in millions)	24.81	40.23	14.65	9.04	0.58	0.64
Density (per sq. mile)	806	572	244	176**	67	158

In area West Bengal is comparable to Ceylon (25.3), Assam to the U.K. (94.2), and Bihar and Orissa to Hungary (66.3). In population West Bengal compares with Egypt (20.4), Bihar with France (41.9), Orissa with Afghanistan (12.0) and South Africa (12.3), and Assam with Ceylon (7.6).

The density of West Bengal is among the highest in the world and is comparable to that of Belgium (734). Bihar's density too is very high and comparable to that of Japan (583) and the U.K. (537). The major area of these two States falls in the fertile Gangetic Plain.

The density of India is 312. The other States of East India have a lower density than this. Orissa's low density is due to the high proportion of forests (23,000 sq. miles) while that of Assam, Manipur and Tripura is due to approximately three-fourths of the area being hills and forests.

* Articles on the Census for North India and Western India appeared in the March-April, '54 and July-August, '54 issues of the MARCH OF INDIA.

** Density shown here is of the censused area which is 51,415 sq. miles: the population of uncensused area is estimated to be about 600,000

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R.A. Gopalaswami, former Registrar General and Census Commissioner of India illustrating a point to pressmen by reference to population charts

Growth of Population

The following table gives the population of each State from 1901 to 1951, the figures within brackets being percentages of population increase in the inter-censal period.

GROWTH OF POPULATION, 1901-1951
(Population figures in millions)

Census year	States					
	West Bengal	Bihar	Orissa	Assam*	Manipur	Tripura
1901	15.83	28.39	10.30	3.81	0.28	0.17
1911	16.79	29.50	11.38	4.48	0.35	0.23
	(+6.1)	(+3.9)	(+10.4)	(+17.5)	(+21.7)	(+32.5)
1921	16.40	29.18	11.16	5.32	0.38	0.30
	(−2.3)	(−1.1)	(−1.9)	(+18.6)	(+10.9)	(+32.6)
1931	17.66	32.55	12.49	6.34	0.45	0.38
	(+7.7)	(+11.6)	(+11.9)	(+19.3)	(+16.0)	(+25.6)
1941	21.84	36.53	13.77	7.59	0.51	0.51
	(+23.6)	(+12.2)	(+10.2)	(+19.7)	(+14.9)	(+34.1)
1951	24.81	40.23	14.65	9.04	0.58	0.64
	(+13.6)	(+10.1)	(+6.4)	(+19.1)	(+12.8)	(+24.6)
1901-21	+3.6	+2.8	+8.3	+39.4	+35.0	+75.6
1921-51	+51.3	+37.9	+31.3	+70.1	+50.4	+109.9

* Figures for Part B Tribal Areas of Assam not included.

As in the rest of India, there is a sharp divergence of trend of population growth between the years preceding and the years succeeding 1921 in all the States. The year 1921 is the great divide of population growth. Before 1921 the increase of population was sporadic. Plague, cholera and malaria epidemics; famines and the extraordinary epidemic of influenza in 1918 decimated the population and prevented any effective growth.

Since 1921 the epidemics have been more or less brought under control and no losses by famine have occurred except in Bengal in 1943. In other words the death-rate has been effectively brought down but without corresponding fall in birth-rate, with the resultant high growth of population during the last three decades.

It is, however, to be noted that in the hill-States of Assam, Manipur and Tripura the growth even during 1901-21 was considerable. The epidemics did not hit these areas of difficult communications with the same intensity as the other States.

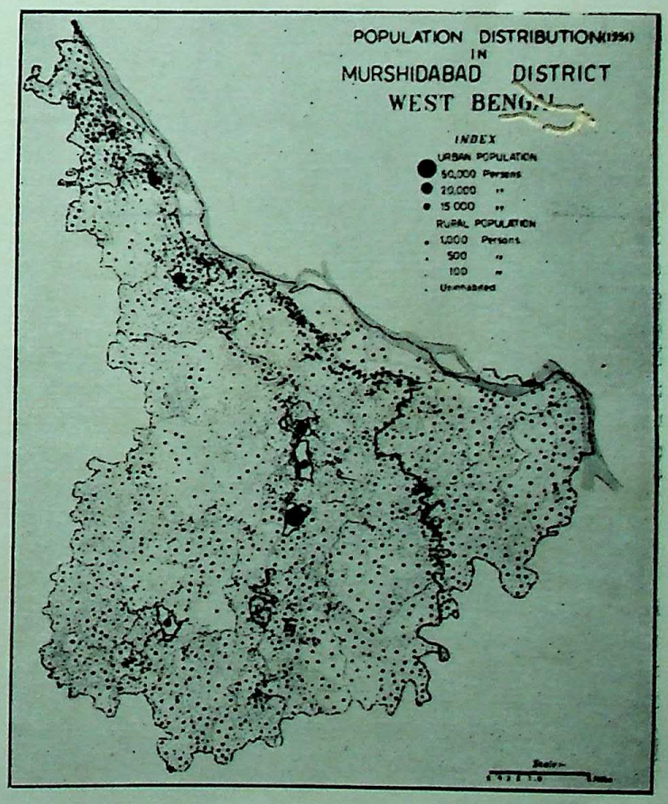
The population of West Bengal was subjected to a violent change during 1941-50. The famine of 1948 accounted for about 1.5 million deaths. Then the partition of Bengal in 1947 led to a large movement of population to and from East Bengal. About 2.1 million displaced persons were counted in West Bengal at the 1951 Census.

The following table shows the birth and death-rates of the States of East India as estimated by the Census Actuary, together with the estimated loss or gain by migration :

BIRTH AND DEATH-RATES AND NET MIGRATION

State	Birth rate	Death rate	Rate of natural increase	Growth rate (1941-51)	Net migration (1941-51)
West Bengal	35.4	28.6	6.8	13.6	+6.8
Bihar	39.0	26.6	12.4	10.1	−2.3
Orissa	37.2	29.9	7.3	6.4	−0.9
Assam	36.7	31.8	14.9	19.1	+4.2

Both birth and death-rates are high, the rates in Assam being particularly so. As in the rest of India there is a visible trend towards lower birth as well as death-rates. But the fall in birth-rate is due not to



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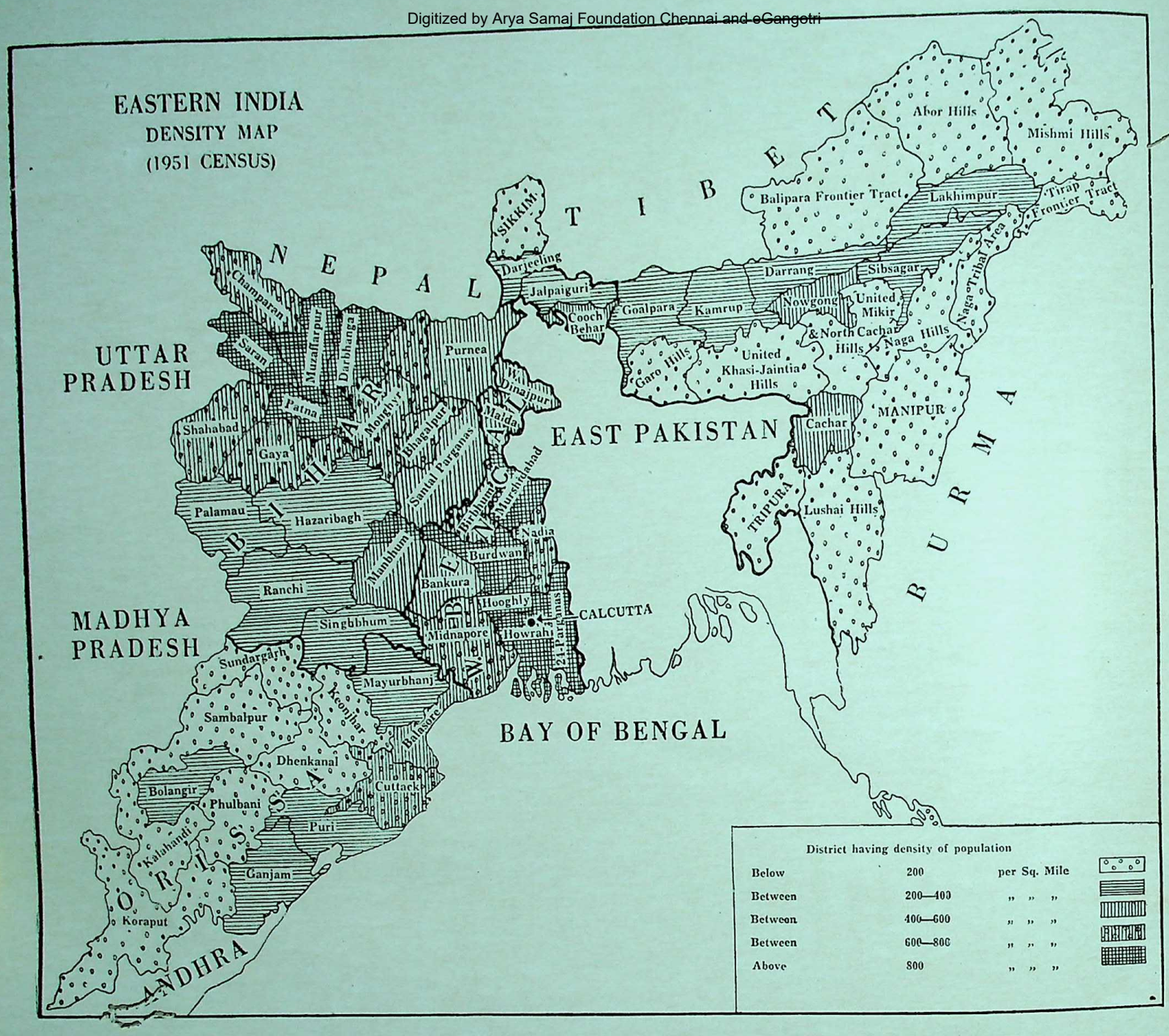

any family planning but to such factors as decline in the proportion of persons in reproductive age-groups, a back-wash of the influenza and other epidemics of the pre-1921 period.

The decline in death-rate is, however, real, being the result of better medical facilities and health organisation. In short, East India, like the rest of the country, is passing through the phenomenon of rapidly falling death-rate without a corresponding fall in birth-rate. The result is bound to be high growth-rate.

West Bengal gains heavily by migration, owing principally to the draw of the Calcutta Industrial area, the contributing States being in order Bihar, Uttar Pradesh and Orissa. Assam's gain is the result mainly of labour immigration for tea-plantation and influx of refugees from Pakistan. Bihar and Orissa lose mainly to West Bengal and Assam.

While 17.3 per cent of the population of India is urban, the proportion of urban population in East India is only 11.1, the lowest of all the zones in India. West Bengal alone has a high urban proportion (24.8). The urban proportion of the other States is very low—Bihar : 6.7, Orissa : 4.1 and Assam : 4.6.

But the urban proportion is steadily increasing in all the States as the following table will show :

PERCENTAGE INCREASE IN URBAN POPULATION

	1941-50	1931-40	1921-30
West Bengal	+32.6	+64.1	+15.1
Bihar	+37.8	+34.2	+21.8
Orissa	+26.6	+14.7	+12.2
Assam	+65.9	+30.5	+30.2

It is significant to note that in Bihar, Orissa and Assam even the rate of increase is progressively rising. About three-fourths of the urban population of West Bengal (6.2 million) is concentrated in Calcutta (4.6 million). In Bihar there are five class I cities (over 100,000 population); in Orissa there is only 1 such town, in Assam none, and in West Bengal 7.

Agricultural and non-agricultural classes

In India 69.8 per cent of the people depend for

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their livelihood on agriculture and the remaining 30.2 per cent on non-agricultural occupations. The corresponding proportion for East India is 75.6 per cent and 24.4 per cent respectively. The agricultural proportion in West Bengal is 57.2, in Bihar 86.0, in Orissa 79.3 and in Assam 73.3.

The proportion of population dependent on agriculture has been increasing throughout India during at least the last two decades with the exception of a few States including West Bengal. This shows that pressure on agriculture has been increasing and the non-agricultural occupations, particularly village industries, have failed to develop in proportion to the increase of population.

Another significant trend, in common with the rest of India, is the fall in the proportion of workers to the total population. This trend is observable in Bihar, Orissa and Assam, while in West Bengal the proportion has shown a slight increase.

Secondary occupations are very poorly developed among the agricultural classes. Only 22.5 per cent of the self-supporting agriculturists in West Bengal, 12.5 per cent in Bihar, 26.3 per cent in Orissa and 13.7 per cent in Assam have a secondary occupation and a good proportion of these have only agricultural secondaries. This is one of the serious drawbacks of Indian agriculture. The agriculturists have ample leisure but no profitable non-agricultural occupations to keep them occupied.

The holdings are progressively shrinking in size throughout India. About 71 per cent of the holdings in West Bengal, 87 per cent in Bihar, 61 per cent in Orissa and 66 per cent in Assam are under five acres.

The cultivated area per capita is also going down in all the States. It stands at 0.45 acres in West Bengal, 0.57 acres in Bihar, 0.83 acres in Orissa and 0.59 acres in Assam.

The percentage of people depending on non-agricultural occupations for their livelihood is as follows in the various States of East India.

	West Bengal	Bihar	Orissa	Assam	Manipur	Tripura
Total non-agricultural	42.79	13.96	20.71	26.66	16.55	24.75
V—Production other than cultivation	15.36	3.94	6.33	14.68	6.98	6.01
VI—Commerce	9.32	3.40	2.90	3.90	4.18	6.39
VII—Transport	3.05	0.72	0.53	1.28	0.53	0.52
VIII—Other Services and Miscellaneous services	15.06	5.90	10.95	6.80	4.86	11.83

It will appear that non-agricultural occupations are very poorly developed in all the States except West Bengal. The high proportion under "Production other than cultivation" in Assam is only due to the tea-garden labourers being included under the "Plantation" industry which has been classified as non-agricultural.

The number of households per 1,000 houses is 1,050 in Orissa, and 1,080 in Assam. The figures for West Bengal are inaccurate, and those of Bihar are not available.

The size of rural household is 4.8 in West Bengal, 5.2 in Bihar, 4.6 in Orissa and 5.2 in Assam, while that of urban household is 5.2 in West Bengal, 4.7 in Bihar, 4.5 in Orissa and 5.3 in Assam.

Classed by size, the predominant type of household in all the States is medium (4-6 members) which accounts for 40-48 per cent of the households. The next numerous is the small size (three members or less) and accounts for 27-37 per cent of the households.

The ratio of females per thousand males in 1951 was 945 in East India as against 947 of India. The ratio in the States was—West Bengal: 859, Bihar: 989, Orissa: 1,022 and Assam : 879. The low ratio of West Bengal is due to its large urban population consisting of a large proportion of adult male immigrants unaccompanied by their females. In Assam the low proportion is due to the immigrant tea-plantation labourers similarly coming without the females. The reason for the high sex portion of Bihar and Orissa is mainly the emigration of adult males.

Like the rest of India, the age of marriage is rising progressively in East India. Infant marriages are becoming less and less common. The proportion of widows is gradually decreasing. Marriage is universal—both among men and women.

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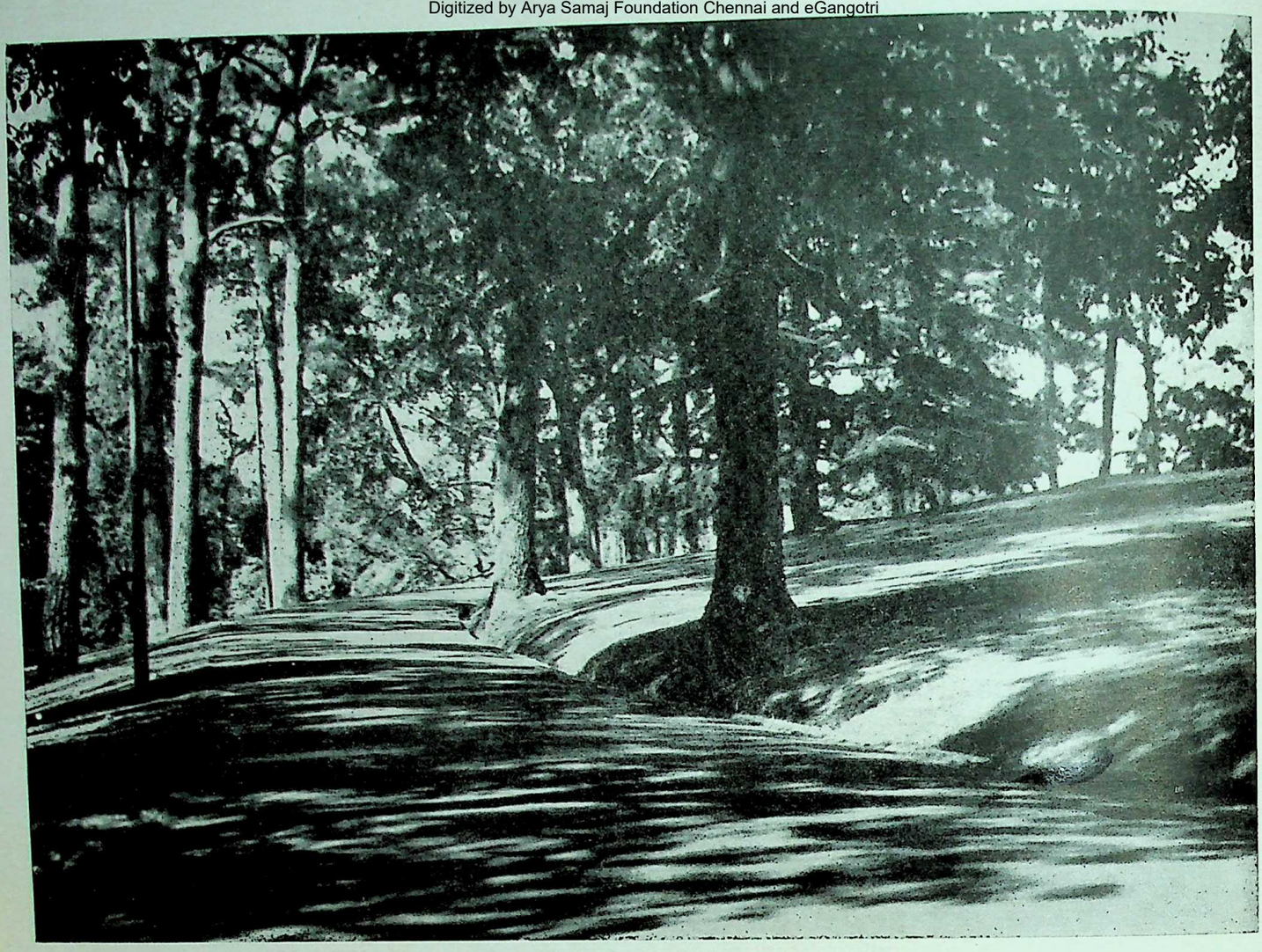

Pine trees, Shillong

East Indian Flora

A. Percy-Lancaster

ON looking at the physical map of Eastern India one is struck primarily by the fact that the major portion of the area is a great plain through which run two of the world's largest rivers arising from an immense mountain barrier to the north.

Eastern India gets the lion's share of the monsoon which comes sweeping up the Bay of Bengal, and rainfall varies from a mere 60 inches in places, to over 600 inches at Cherrapunji in the hills of Assam.

The fertile soil and abundance of moisture together result in a prolific plant growth, both in the plains where acres of flat rice paddy and banana groves dominate the scene or in the dense jungle and thick forests of the mountains.

The areas which together constitute what we call Eastern India are rich in plant material, with a great variety in plant form, size and beauty. One can scent the fragrance of the flowers of Hedychium (Butterfly Lily) or be repulsed by the offensive stink of Paederia foetida, a scrub-like plant which borders the paths in jungles and pollutes the air as one brushes through the thickets in which these plants are found in Bengal.

Around the Sea coast one finds the usual coconuts, which are replaced by the Talipot palm as one progresses inland. A characteristic of the great Gangetic delta are the densely growing mangroves, most curious plants with stilt-like roots which grow in swamps.

Though by far the greatest variety of plants is to be found in the submontane and alpine areas in the Eastern Himalayas, there are a number of trees, shrubs, and climbers which prove of both decorative value and utility to inhabitants of the plains. In the large expanses of water which are naturally to be found in

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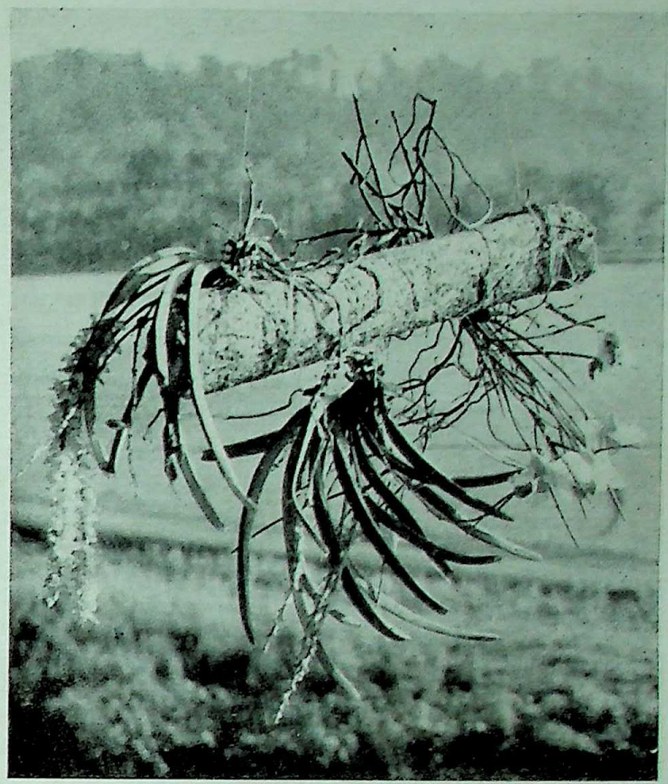
so damp a region the white water lily and the pink Lotus grow plentifully.

Unfortunately, the South American Water Hyacinth finds ideal conditions in these parts, and borrow pits, village tanks, and even large *jheels* are covered from bank to bank with tightly packed masses of these floating aquatic plants. Their beauty is undeniable when in bloom, for the spikes of blue flowers are borne with a generosity which is prodigal.

Cultivated in village ponds one finds the water Chestnut (Trapa bispinosa) which provides the inhabitants with a juicy, though rather tasteless chestnut-like fruit. Another water plant which may commonly be found in marshy areas and around the fringes of lakes, is the Ipomoea aquatica, which is of great value for its pithy stems from which is collected the material used in making *sola-topies*.

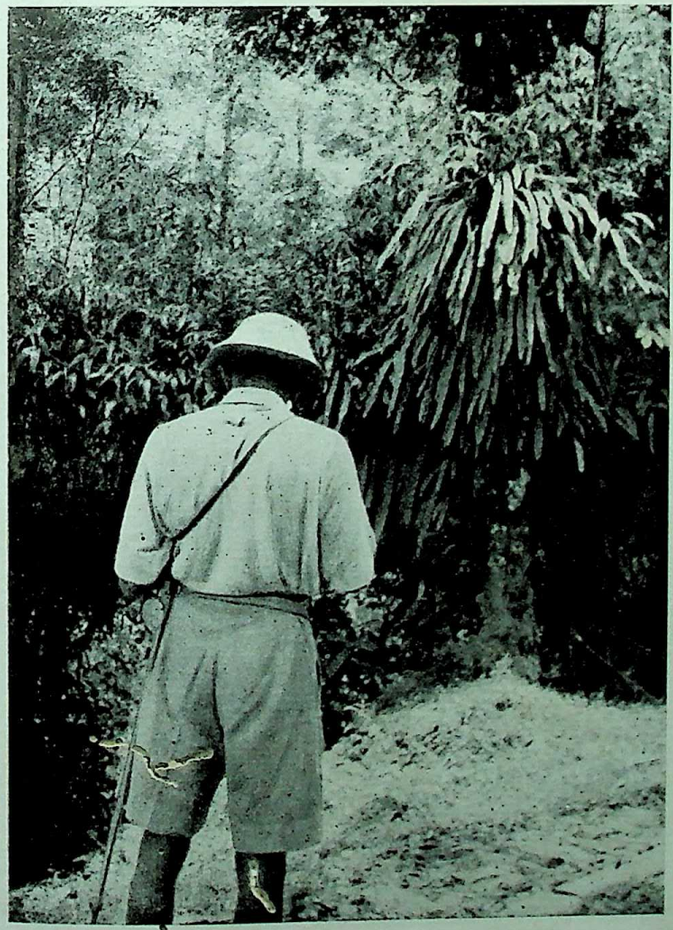
Climbers and Creepers

Eastern India is rich in climbing plants some of which are small delicate herbs, while others develop into thick stemmed lianas which grow strongly among the branches of even the tallest jungle trees. Herbaceous in character are the Glory lilies (Gloriosa superba) whose slender stems are supported by wild scrub growth, and which through the rainy period, bear clusters of curiously shaped, red and yellow flowers. The tuberous roots of this climber are rich in colchicine, a chemical which is increasingly being sought after throughout the world.



Orchids, Shillong

Epiphytes *orchids and a fern* (Pleopeltis)



In Assam one finds in the foot-hills several species of Aristolochia with extraordinary shaped flowers that defy description. Curious rather than beautiful, the flowers of several species of Aristolochia have a putrid smell.

In the Terai, that dense jungle which covers the foot-hills, one finds Bauhinia Vahlii, a heavy climber which often produces a trunk of wood six to nine inches in diameter near the ground. Every spring the tops of the trees over which these rampant climbers grow are covered in a mass of white flowers arising from a crown of huge divided leaves which resemble in shape camel's feet.

It is among the trees of the plains, however, that we find the greatest beauty. In February-March the Simul or Silk cotton tree (Bombax malabaricum) raises its bare branches covered in great crimson chalices. Earlier in the year another of the cotton trees, Cochlospermum gossypium is found, bare-branched and golden, crowned with large yellow flowers plentifully borne in wooded areas from Bihar to Assam.

The Indian Laburnum (Cassia fistula is at home in Eastern India, and so is the Coral tree (Erythrina indica) which may be seen along the foot-hills brightening cultivated areas every here and there, or in the dense sal forest which forms the greatest cover along the foot-hills.

Also found in association with the sal is Dillenia pentagyna, a relative of the Chalta which is so favoured by the Bengalis. Larger in leaf than the Chalta, and deciduous in the hot weather, D. pentagyna bears great

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Bamboo trees

golden, saucer-shaped flowers in profusion, and merits greater popularity in gardens than it now enjoys.

From the western Dooars as far east as the Khasi hills or even further goes the Ceylon Ironwood, Mesua ferrea. These trees make a grand sight both when the new leaves develop, first brilliant red, then fading through pink to green, and again when covered with their deliciously fragrant white flowers.

Mountain Flora

To find the real wealth of the flora of Eastern India one must tramp through the deciduous forests of the lower hills to the evergreen belt about 6,000 ft. above sea-level. This region is so rich in plant material that plant hunters are still finding beautiful species after repeated visits and years of patient search.

The terrain varies, and one may have to cross hill-sides deeply gullied and scored by fast moving streams which become raging torrents in the monsoon, or one can find a more rounded hill formation, of open aspect and with grass as the primary cover. Still further march may take one into really rugged country where valleys become almost perpendicular gorges.

Because of the denseness of scrub and tree growth, travel is limited sometimes to barely a mile or two a day. In parts of these wild and uninhabited regions the natural declivity is so steep that even plants find difficulty in retaining a precarious foothold. There are places in Assam so humid and damp that one dare not leave one's walking stick in the ground for fear that it takes root!

In this vast uninhabited region of the earth perhaps the most striking feature in places is the dense tangle of bamboos which forms the forest at certain altitudes rising through two to three thousand feet of altitude. Strips, miles on end, make physical progress through them almost a sheer impossibility, every yard of advance having to be fought for with axe, *dao* or *kukri*.

Having won through such a zone one comes to delightful glades where grass forms patches among belts of giant Rhododendrons. Higher still, the tree line gives way to alpine meadows carpeted with a host of multi-coloured herbaceous plants.

In spring Campbell's magnolia is a glorious sight in some valleys where the trees are steeped in an almost permanent mist or rain from May till October.

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Later, towards the end of the year, the autumn flowering Cherry, Prunus Puddum, brightens the hills around Kohima.

Many beautiful Lilies find themselves at home in the hills of Bengal and Assam. In the woods at elevations of 9,000-11,000 feet grow the tall giant Himalayan Lily (Cardiocrinum giganteum). From a crown of great heart-shaped leaves rises a towering stem 8 to 10 feet high which holds 40 to 50 white and fragrant trumpets which hang at an angle so as to keep the rain from wetting the pollen of the flowers.

Above 6,000 feet one may come across clumps of Lilium Wallichianum, whose delicate linear leaves are in contrast to the huge white bell-shaped flowers which are borne two or three per plant. The Nepal Lily, (Lilium nepalense), hardly looks like a Lily at all, for its green and brown petals are strongly reflexed, and are not easily seen in the shadows of the forests in which this species grows.

To the list of cultivated Lilies has been added recently a charming new species found by Capt. Kingdon Ward in the region of Manipur, and named by him in honour of his wife, (a Miss Maclin) Lilium Macliniae.

Rhododendrons in many species provide a wealth of colour at high elevations. Some are tall forest trees whose flowers are seldom seen except when they fall to the ground. Others, growing beyond the tree line, are dwarf shrubs which cover great tracts in brilliant splashes of varying colours.

These are beautiful alpine plants in great variety—Primulas, Gentians, Androsace, Corydalis, Meconopsis and Nomocharis to mention only a few.

Eastern India shares with South America the greatest wealth of Orchids in the world. Many are insignificant and even unattractive to look at, but many more are numbered among the most beautiful flowers in the world. Dendrobiums in shades of mauve and yellow cling to the rough bark of trees in the forest. Cymbidiums and Cypripediums grow in moss on rocks, and the Bamboo orchid (Arundina bambusaefolia) and Nun orchid (Phaius Wallichii) prefer growing in soil to perching on trees.

Whichever part of Eastern India one visits it is certain that there will be a host of beautiful plants to see and enjoy.

Bird-Life

Jamal Ara

I PRESUME all those who read this article can distinguish a crow from a myna. A crow is bigger than a myna and it is black; the two are different species. If you look carefully in most places throughout India, you may distinguish two types of crows—one bigger and wholly black, the other slimmer and grey on the neck. Each one is a species too, respectively called the jungle crow (*Corvus macrorhynchos*) and the house crow (*Corvus splendens*). Similarly there are two types of myna, too. There are the numerous snuff-brown chatter-boxes of birds walking about with a peculiar old and wise-man gait; half stooping and half stalking. There are also the more active black and white birds, or the pied ones. The first is the common myna (*Sturnus tristis*) while the second is the pied myna (*Sturnus contra*).

It is easy enough to recognise such broad groups as crows and mynas but we begin to understand bird-life when we start distinguishing different types of crows and mynas. This understanding, however, does not stop with noticing species of crows, mynas or any other bird but works down to more minute distinctions.

While considering the bird-life of eastern India it is essential to examine the influence the environments of this part of the country have on birds. Such an examination is easier if we notice the ways in which the bird-life of eastern India is different from that of other parts of the country. The comparison can extend over morphological changes, such as size and colour, or psychological changes expressed in habits. The latter is slightly more technical and shall, therefore, be excluded from this short and general essay.

So let us return to the jet-black jungle crow and the pied myna. The jungle crow of Delhi in the North placed side by side with a jungle crow of Calcutta or Shillong in Eastern India looks rather poorly developed. Firstly, it is not as deeply black; secondly, it is smaller and its beak is not so prominently arched and does not look as powerful. On the other hand, the Delhi jungle crow is a more robust and impressive creature than the small crow of the extreme South India, while the Himalayan crow is even bigger than the Calcutta or Shillong crow but is not as dark or as magnificently bow-beaked.

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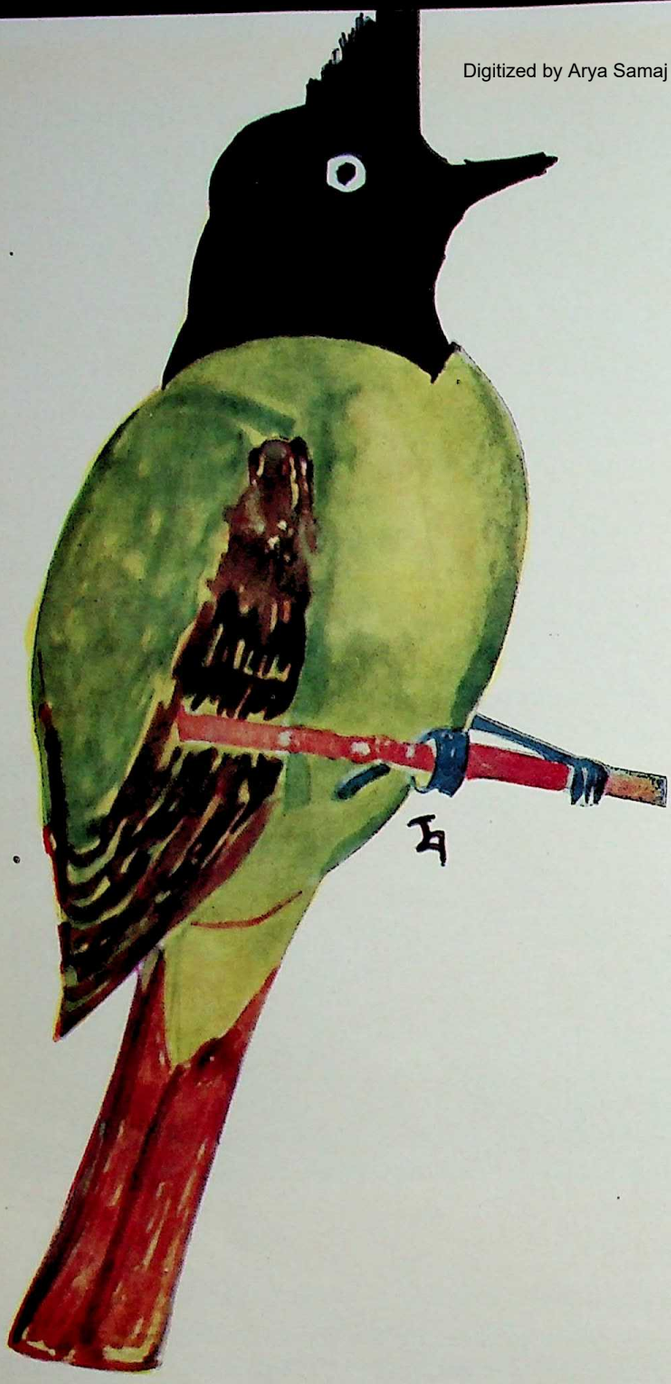

Black-crested yellow bulbul of the heavier forests of Eastern India

On the basis of these regional differences four geographical races of the jungle crow are recognised. The best-developed jungle crow is called *Corvus macrorhynchos macrorhynchos,* and is referred to as the typical subspecies (a word which means the same as a geographical race). The word *macrorhynchos* used twice denotes that it is the most typical race of the species. This typical race occupies eastern India from the Andaman Islands to Calcutta and Assam. The Himalayan jungle crow is *Corvus macrorhynchos intermedius* and is slightly over-size. The smallest is *Corvus macrorhynchos culminatus* of South India, which attains its smallest size in Ceylon. As you proceed northwards from Madura the jungle crow goes on increasing in size till in Delhi and Ambala it is only slightly smaller than the typical eastern race. Further north in the Himalayas of course the crows are still bigger, but slightly bigger than the Delhi crow is *Corvus macrorhynchos levaillanti* which occupies eastern Uttar Pradesh, Bihar and western districts of West Bengal.

In cold climate warm-blooded animals (birds are such) are slightly bigger bodied than in warmer climates. So size varies according to latitude and altitude among most birds and the larger-sized subspecies are in the north and the higher levels of the Himalayas while the smaller races occupy the extreme southern territory. That is why the Himalayan race of the jungle crow is the biggest and the southern race the smallest and the one in East India not as big as the Himalayan but not as small as the southern. This being so we can roughly expect the east Indian races or subspecies of most Indian birds to occupy an intermediate position in regard to size. And size is an important and noticeable distinguishing character of birds, especially in regard to splitting of species into subspecies.

The subspecies occupying a rainy and humid area tend to be darker and deeper coloured than the subspecies of the same bird inhabiting a drier area. The race living in a desert or arid area tends to be pale. We all know that Cherrapunji in Assam is the rainiest spot in the world, and that entire eastern India is more humid than northern and central India, more wet than any other part of India except the narrow long belt of the Western Ghats southwards from Bombay, Cherrapunji gets 450 inches of rain each year, most parts of Assam and Bengal get over 100 inches of rain and even the driest areas in western Orissa and Bihar receive over 40 inches. In Rajputana the rainfall is less than 20 inches.

The effect of rainfall on bird colouring is evident in the pied myna of which too four geographical races are recognised on the basis of differences in colouration. The Ambala and Delhi bird is *Sturnus contra dehrae* which occupies all north India and extends eastward up to Bihar. In the Dooars of North Bengal, Assam and Tripura the race is *Sturnus contra capensis.* The two compared together reveal the differences; *dehrae* is paler and less richly coloured, both above and below, than *capensis,* and seen side by side *dehrae* appears almost ashy rather than jet-black, though by itself it seems black enough.

There is an even better example in the yellow-eyed babbler (*Chrysomma sinense*) of which two races spread over the whole of India. In Rajputana this bird is rufescent paling to cinnamon on the outer wings but the Assamese subspecies is very dark brown, paling only on the rump, with wings dark chestnut.

Dillon Ripley found a distinct break in the bird populations on either side of the Kosi—the subspecies to the east of the river having more dark pigment in their plumage—because down that valley there is an isohyet, a band west of which the annual rainfall is 50 inches, east of which the total rainfall is 75 inches. This change in colouration he found in regard to fourteen birds, or 67 per cent of these birds which are represented on both sides of the Kosi by two distinct populations.

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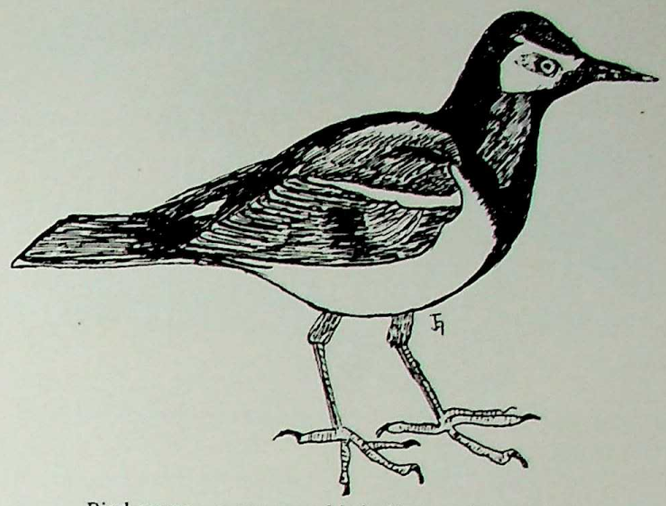
From what has been said above one would expect a gradation from large light-coloured subspecies in the Himalayas and northern India (largest in the mountains and palest in the desert, for the mountains have higher rainfall than the plains in the same region) to smaller (but not the smallest for that would occur in South India) dark subspecies in Assam, West Bengal, Manipur and Tripura. In Orissa and Bihar the differences would be slightly less noticeable.

On the basis of humidity there is some rough correspondence between the bird populations of south-west India and eastern India, though the higher latitude and altitude do introduce some prominent differences. Other differences between the birds of south-west and eastern India are due to genetic factors, but about that later.

Taking into account such geographical subspeciation scientists have divided India into four sub-regions: (a) the entire Himalayas, including the portion of the range that falls in Assam; (b) the Indo-Gangetic plain which excludes the Brahmaputra valley but includes North Bihar and deltaic West Bengal; (c) the Peninsula, south of the Indo-Gangetic plain and including Orissa and Chotanagpur (Bihar); and (d) Assam including plains on both sides of the Brahmaputra and the hills south of it, also Tripura, Manipur and the Lushai hills. Most wide ranging species tend to have a subspecies in each of these sub-regions.

We see that eastern India alone of all the regional divisions of India extends over all the four zoo-geographical sub-regions. That should by itself contribute to the bird-life there being extremely rich. The Himalayas, the Garo hills and the Rajmahal hills (each lying in a separate zoo-geographical sub-region) are scarcely 250 miles from each other. That again is a factor contributing to the richness and complexity.

Thick build green pigeon found throughout the cooler forests of Eastern India



Pied myna—a common bird all over the country

In the check list of the birds of Bihar prepared by the present writer there are as many as 547 bird forms; Orissa is estimated to have only a few less while West Bengal and Assam have a few more. In each district—roughly 4,000 sq. miles in area—in eastern India there are over 300 birds, and the total number of species (and subspecies too, where geographical races occur), for the entire area of 258,890 sq. miles is over 1,500; that is nearly 60 per cent of all the birds known from any part of India, Burma, Pakistan and Ceylon are found in eastern India.

There are 564 forms of birds in the Northern Plains as calculated by the present writer in the systematic list drawn up by her. Of these, as many as 452 are found in the Middle Ganges Valley (Bihar), 450 in the Lower Ganges Valley (West Bengal), 447 in the Dooars (northern West Bengal), and 428 in the Brahmaputra Valley (Assam). In the distribution list of the 287 more common hill-birds given by Salim Ali as many as 223 are found in Darjeeling and Eastern Himalayas and 197 in the Assam hills, south of the Brahmaputra. That means that among the more common hill-birds the rest of India, Burma, Pakistan and Ceylon can add less than 60 to those found in eastern India. Among birds of the Plains, there are only 102 birds all over the Northern Plains that are not found in eastern India.

There is also another aspect of this richness which is best stated here: many birds are represented by more than one subspecies in eastern India. In Bihar alone there are 35 species resident throughout the year which have more than one geographical race in that State—generally one Indo-Gangetic and another Peninsular, the river Ganga functioning in most cases as a rough boundary between the territories occupied by the respective subspecies.

Similarly the river Brahmaputra in Assam is a rough boundary and frequently the territory to the north of it is occupied by one subspecies while another inhabits the area south of it. Many species of the plains range on both sides of the river without noticeable geographic variation while some hill forms curve

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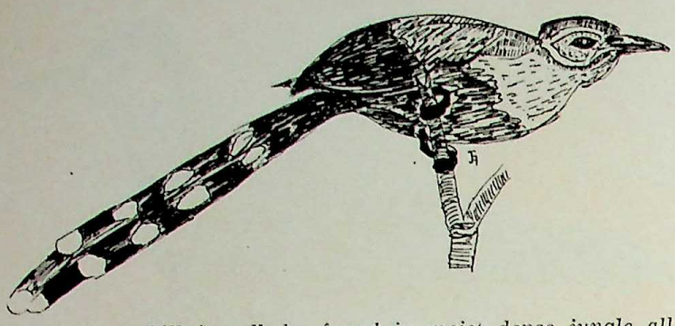

Large green-billed malkoha found in moist dense jungle all over Eastern India

round the Brahmaputra gorge and the headwaters of the Lohit.

The Kosi has already been mentioned as a boundary, but the most remarkable instance of it as a bird-frontier is in regard to the little brown dove (*Streptopelia senegalensis*) which extends from the Kosi westwards across two continents right up to Senegal in extreme West Africa, but is not found east of that river. Few people can have difficulty in identifying this bird, quite the smallest of our doves, the size of a myna, earthy-brown and pinkish-brown below with a miniature "chessboard" in red and black on either side of the neck. The Kosi boundary for this bird continues down the Ganges into which the river falls, and then down the Hooghly, the westernmost distributary of the Ganga.

In contrast to rivers, hill ranges and mountains are rarely a boundary between two races in eastern India. This, of course, is due to the fact that hill ranges promote a continuity of vegetation.

Other factors which contribute to the richness of bird-life in eastern India are the spread of the region from 19 to 29 degrees North Latitude, the head of the Bay of Bengal entering into the main landmass to within 350 miles of the Himalayas (a fact which is not repeated elsewhere in India) and the extremely varied topography—from the sea-level beaches of Orissa and West Bengal to over 20,000 feet in the Assam Himalayas.

There are vertical altitudinal bird-life zones up a mountain and so within a short surface area many bird forms, which normally in a flat country would have spaced themselves out over a vast area (reaching up to the Arctic Circle), crowd together, one above another on the mountain slope. The Himalayas alone are not the mountains introducing such variety in eastern India. Most of southern Assam, Manipur, Tripura and the Lushai hills are mountainous, reaching up to 9,000 feet. Most of Darjeeling district is between 6,000 and 10,000 feet. In Bihar two hilltops reach up to 4,000 feet and on the Orissa border in the Eastern Ghats there is a point above 5,000 feet.

Birds of the plains do not generally go above 2,500 feet and above this ceiling there are three well-defined zones approximating to the temperate, coniferous and tundra (or alpine) vegetations and with corresponding changes in avifauna.

Even where the hills are not so high as to reach above the ceiling of the plains birds, though no new species or subspecies may occur due to altitude, changes are noticeable in bird-life. For example, the black drongo at Ranchi, elevation 2,000 feet only, is definitely bigger than the black drongo (*Dicrurus macrocercus*) at Chakardharpur in the plains only 70 miles away.

Then in the Eastern and Assam Himalayas the snow-line is lower than in the Western Himalayas. Plants, animals and birds preferring a cooler habitation come down a good thousand feet in the east. The kaleej pheasant, (*Lophura leucomelana*) descends with the chir pine to the thousand-foot contour in the Siwaliks of Champaran district of Bihar. In the Dooars of North Bengal and in the Brahmaputra Valley in Assam, especially in the extreme north-east many hill-birds come down to the plains, not only in winter as many migratory species do but for residence throughout the year. An excellent example is the Himalayan slaty-headed scimitar babbler (*Pomatorhinus schisticeps schisticeps*) which is found in the plains of the Dooars.

The arcuate Himalayas themselves sweep down to lower altitudes in the east than in the west; near Darjeeling they come down to the same latitude as Muttra. In Manipur birds of the Himalayas occur in the same latitude as that of Allahabad and in the Lushai hills even below the Tropic of Cancer, or an area which would correspond to places south of Jubbulpore. In eastern India mountains disturb the latitudinal arrangement of birds to a greater extent than anywhere else in India.

After climate and topography the most important factor controlling bird-life is vegetation, which is itself determined by latitude, temperature, rainfall and topography. To trace changes in bird-life according to changes of vegetation types in eastern India—from alpine meadows below the snow-line to the tropical evergreen forests of Tripura, the mangrove swamps of the Sunderbans, the sal forests of Orissa and Bihar, and the dry thorny scrub of the dry hinterland in western Orissa and Bihar—will require space that cannot be given in this article. So we will take vegetation along with land-use and consider five broad habitat

Kaleej pheasant

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types. There are (a) forests, (b) cultivated areas, (c) water stretches, (d) built-up areas, and (e) village and town orchards, parks and shrubbery.

Cultivation imposes a grassland vegetation on an area by keeping out trees. It is an imposition on most parts of rainy eastern India and developes best in the extensive plains of North Bihar, North Bengal Dooars, Brahmaputra Valley, deltaic Lower Bengal, the Mahanadi delta and Tripura.

Birds need trees and shrubs for cover and hence in extensive cultivated areas there is not adequate cover for many birds, especially those that are conspicuous on account of gorgeous plumage or are slow on the wing due to long tails. In the cultivated plains such birds are generally eliminated for lack of cover; they find some sanctuary in groves and orchards.

Owing to protective colouration birds which spend much time feeding on the ground have to be so plumaged as to be inconspicuous in a field to birds of prey like the hovering hawk. Buff-brown, chestnut and various speckled combinations either merge the bird with the field or create a dazzle effect in which it cannot be located. Either is excellent camouflage.

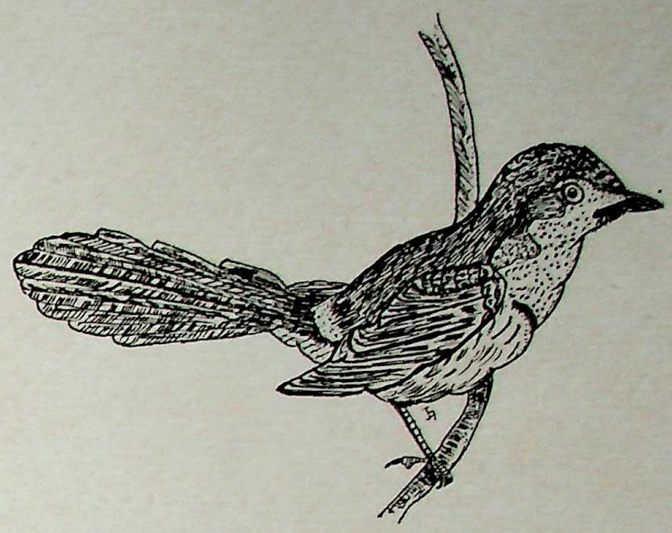
In forests green and blue are the best protective colours and even the dazzle is in a higher key—reds and yellows like those of berries and flowers. Arboreal birds are, therefore, more gorgeously plumaged than terrestrial or partly-terrestrial birds. For example, contrast the green pigeon with its close cousin the dove. The doves are brown or buff, while the green pigeons are all combinations of yellow, green, blue and lilac with patches of red. The thick-billed green pigeon (*Treron curvirostra*), a particularly gorgeous bird is found from Nepal to Assam.

There is only one bird in eastern India which seems protectively coloured for both terrestrial and arboreal habitats, and that is the roller (*Coracias benghalensis*); it is a magnificent display of blues of different shades on the wing but folds all of it under buff over-alls when it sits on a clod of earth, or on a grassy knoll.

In cultivated fields there are more terrestrial birds than arboreal. Pipits, larks and other buff and brown nondescript birds are numerous in cultivated fields. Fortunately for eastern India brown fields are limited to the drier areas of the Orissa and Bihar hinterland, in places closer to the sea or in the Dooars and Assam the greater humidity preserves grass all the year round. The green bee-eater (*Merops orientalis*) is adapted to life in a grassy open country. It is a beautiful bird that tunnels holes in ricefield balks to nest.

Forests are kinder to bird-life than any other habitat, and eastern India has much forest, about 25 per cent of its total area. The forests teem with birds, often hunting together in large parties, different species ranged from the ground to the highest canopy. They also contain such showy things as hornbills, malkoha, orioles, minivets, flycatchers, sunbirds, iora, chloropses and the more gorgeous bulbuls.

In the built-up areas crows, mynas, sparrows, kites and vultures are the most numerous, though the most



Yellow-eyed babbler

extensive built-up area of India, Calcutta, is not as poor in bird-life as other equally large cities. Its birds are the golden woodpecker, dhayal, paradise flycatcher, yellow-cheeked tit, treepie, bulbuls, black drongo, tailor-bird, orioles, barbets, roller and many more.

The village and town orchardry, grovery and shrubbery are compromises between the forest and the other two types of land-use, that is cultivation and urbanisation. Babblers, orioles, doves and flycatchers are the most common birds of orchards and groves.

The plains of eastern India are traversed by big rivers and in North Bihar and western Assam there are extensive marshes, and jheels. On these inland marshes and rivers as well as along the 360 miles of coastline hundreds of shore birds and waders, ducks, terns and gulls are found. Some sea birds like terns and gulls go farther inland in eastern India than elsewhere.

One more factor which distinguishes the bird-life of eastern India from other parts of the country remains to be noticed. That is the genetic and historical factor. Ten thousand years ago there were extensive glaciers throughout the Himalayas and these glaciers in easten India (because of its mountainous nature) came down to the latitude of Ranchi and Manipur. As the Ganges delta had not been built as far out as it is now, we can safely presume that there was no land area left which was not glaciated.

Glaciation had two effects: firstly, it almost eliminated all bird-life from eastern India; secondly, it drove all species southwards and many species in this drive were split into two groups separated by the Bay of Bengal—those that went to South India and those that went to Malaya. As glaciation was prolonged the Malayan and South Indian forms became differentiated, and when the glaciers retreated the spread of birds northwards was from two sources—South India and Malaya.

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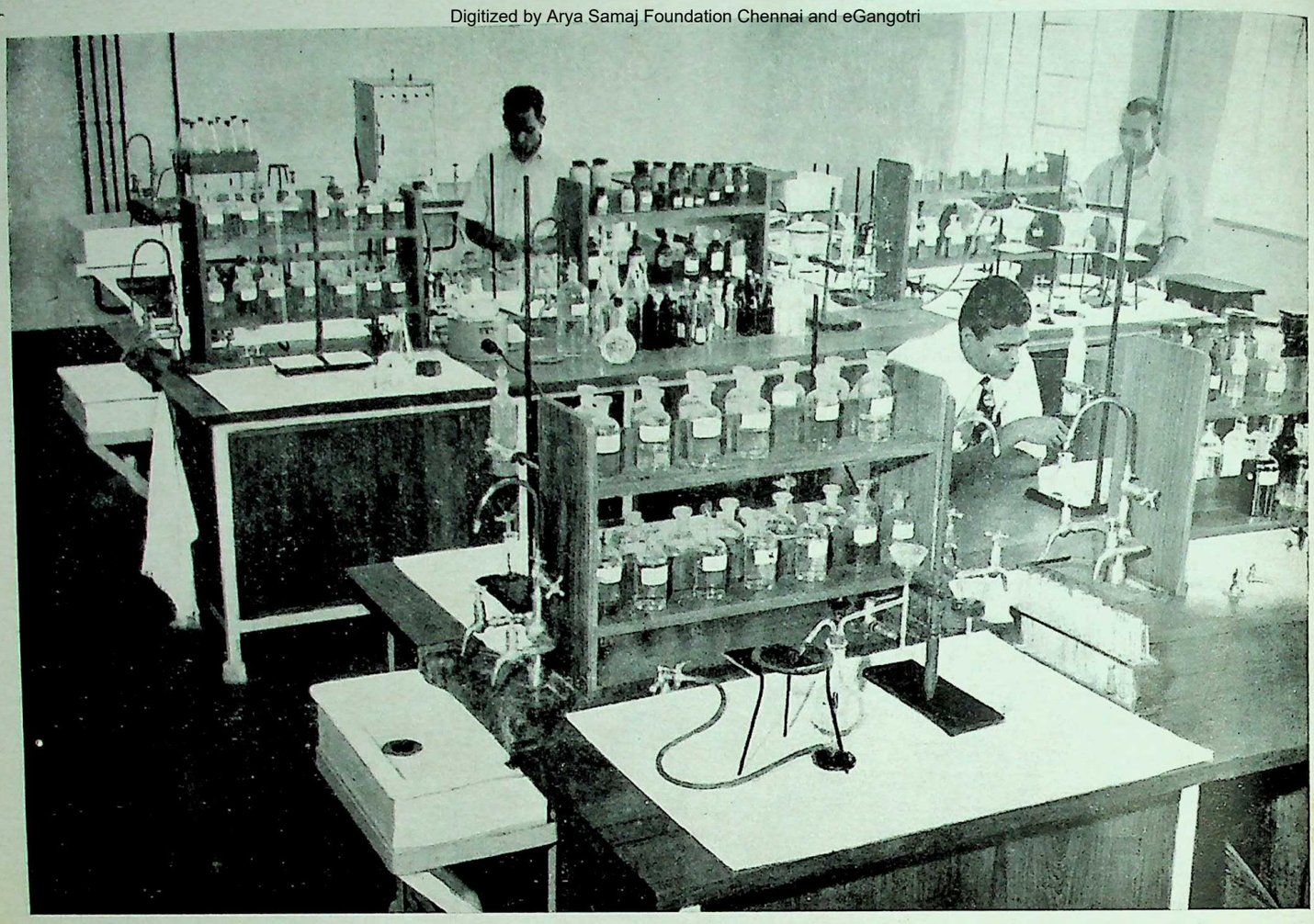

A laboratory of the Central Glass and Ceramic Research Institute, Calcutta

The Development of Science

R. C. Majumdar

THE development of modern science in India owes its origin by and large, to the spread of western education. Ancient India's contribution in the field of science, specially in Astronomy, Mathematics and Medicine is perhaps one of the impelling factors in the development of science in the world. Coming to recent times, however, scientific development in India was very much hampered by the negligence and lack of patronage of our erstwhile rulers.

Towards the end of the eighteenth century Indian scholars started thinking in terms of "Modern Scientific Knowledge". This new outlook led to the establishment of the Asiatic Society of Bengal.

From 1784, this pioneer institution contributed much to the analytical study of India's past history, literature, language, culture, archaeology, ethnology, geology and other branches of science. For almost a century this research institute served as a solitary common platform for the analysis of all branches of science—Physical and Natural.

The Royal Botanic Garden in Calcutta renamed as the Indian Botanic Garden on January 26, 1950, was established by the East India Company at the suggestion of the Late Robert Kyd, R.E., in 1787, as "a nursery for rearing and propagating for the public benefit the production of the other countries and climate". Col. Kyd started it with a little over 300 acres of land, which was later reduced to 273 acres, 27 acres being transferred to the then adjoining Bishop's College, now Bengal Engineering College, Sibpur.

The garden is treated as a miniature map of different vegetations of the world on Marcator's projection, representing the tropical flora. There are more than 16,000 trees, shrubs and climbers growing in the open and several thousands of herbaceous species in the palm-houses, orchid-houses and ferneries.

This garden is the best centre in Asia for the

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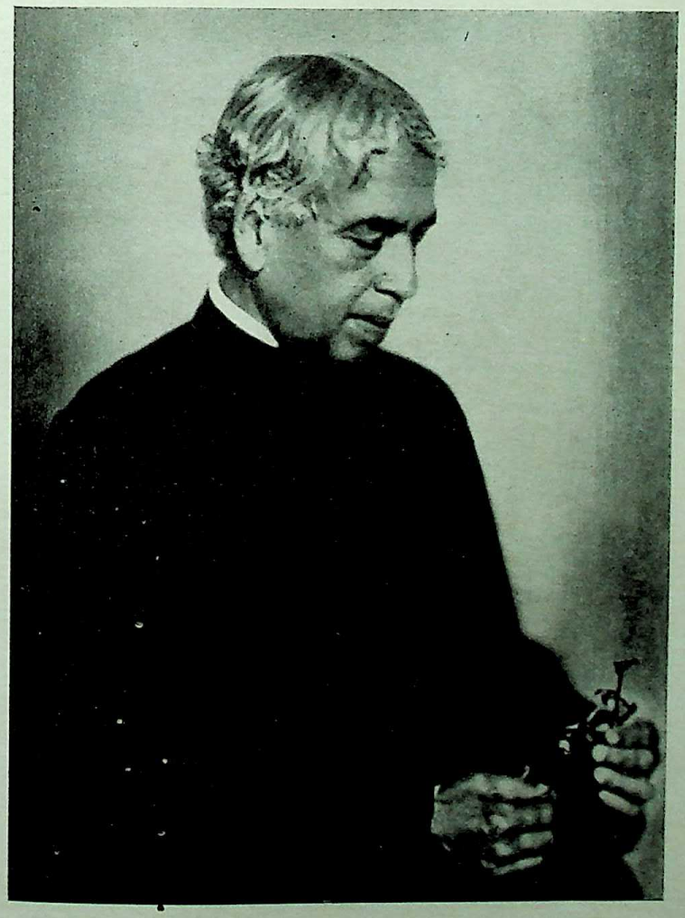
scientific study of plants, and possesses the herbarium, which contains important data on subjects like botany and floristics.

Several important publications on botany have been brought out from this institution by Roxburgh, Wallich, Hamilton, Hooker, Griffith, Clarke, Anderson, King, Prain, Gage and the present Superintendent Dr. K. Biswas and others. The annals of the Royal (now Indian) Botanic Garden, Calcutta, and the Annual Reports of the Garden are the two outstanding publications that are issued from this institution. The garden library possesses the hand drawn coloured pictures of over 3,000 plants, prepared by Dr Roxburgh, the second Superintendent of the Garden and "Father of Indian Botany". These illustrations are the only ones of their kind in the world. The library is one of the biggest in the East on the subject of Botany.

It was as early as 1824 that the teaching of science was first introduced in Hindoo College, Calcutta. By and by, the college introduced the teaching of Physics, Biology and Geology.

This institution has made many notable contributions in the field of science. It was here that Sir P. C. Ray laid the foundations of research work in Chemistry in India. An active school of Chemistry soon grew up under his inspiring leadership and many notable contributions to various branches of Chemistry were made by the members of the school.

Sir J. C. Bose



Sir J. C. Bose contributed substantially towards the development of science in India. It was in the Presidency College Laboratory that Sir J. C. Bose first performed his famous experiment on "Polarisation of electric waves". The work was communicated to the Asiatic Society of Bengal in 1895. Later on he became intrested in plant physiology and after his retirement he founded the Bose Institute where he carried on this work till his death.

Research work carried on in the Presidency College Laboratory is at present being financed through generous grants-in-aid from the Government of India and the Government of West Bengal.

In 1869, Dr. Mahendra Lal Sircar, a private and leading medical practitioner of Calcutta, appealed to his countrymen, "we want an institution which will combine the character, the scope and objects of the Royal Institute of London and of the British Association for the Advancement of Science. We want an institution which shall be for the instruction of the masses, where lectures on scientific subjects will be systematically delivered and not only illustrated experiments performed by the lecturers, but the audience should be invited and taught to perform them themselves. And we wish that the institution be entirely under native management and control...."

This appeal resulted in the formation of the Indian Association for the Cultivation of Science. The setting up of this body forms an important epoch in the history of the development of Science in India. Many well-known names are associated with this Association, among them being Rev. Father E. Lafont, Rector of St. Xavier's College, Pandit Iswar Chandra Vidyasagar, Raja Rajendra Lal Mitra, Rai Bahadur Kristodas Pal, Acharya Keshab Chandra Sen, Maharaja Sir Joteendra Mohan Tagore, Moulavi Abdul Latif Khan, Babu Joy Kissen Mookerjee, Hon'ble Sir Ramesh Chandra Mitra and Justice Gooroo Das Banerjee. The Association also secured the consent of leading scientists like Sir J. C. Bose, Sir Asutosh Mookerjee and Sir Niiratan Sircar, to work as honorary lecturers. Till 1904, the Institute conducted regular science classes.

In 1904, Calcutta University introduced science classes through its constitutent colleges. This helped the Institute to concentrate more on research work.

In the beginning of the twentieth century an analysis of crystalline copper ferrocyanide was undertaken. In 1906, the Association undertook the important task of recording meteorological observations twice a day and got them published in the daily newspapers.

The year 1907 is memorable in the history of the Institute. It was during this year that Sir C. V. Raman (then Mr C. V. Raman, a distinguished officer of the Indian Audit and Accounts Service of the Government of India) joined the Institute as an honorary research worker. He started some experimental investigations in Acoustics and under his unflagging guidance the Association got new life.

In 1917, Sir Asutosh Mookerjee invited Mr Raman to join the University of Calcutta as the Palit Professor of Physics. This Palit Professorship was instituted

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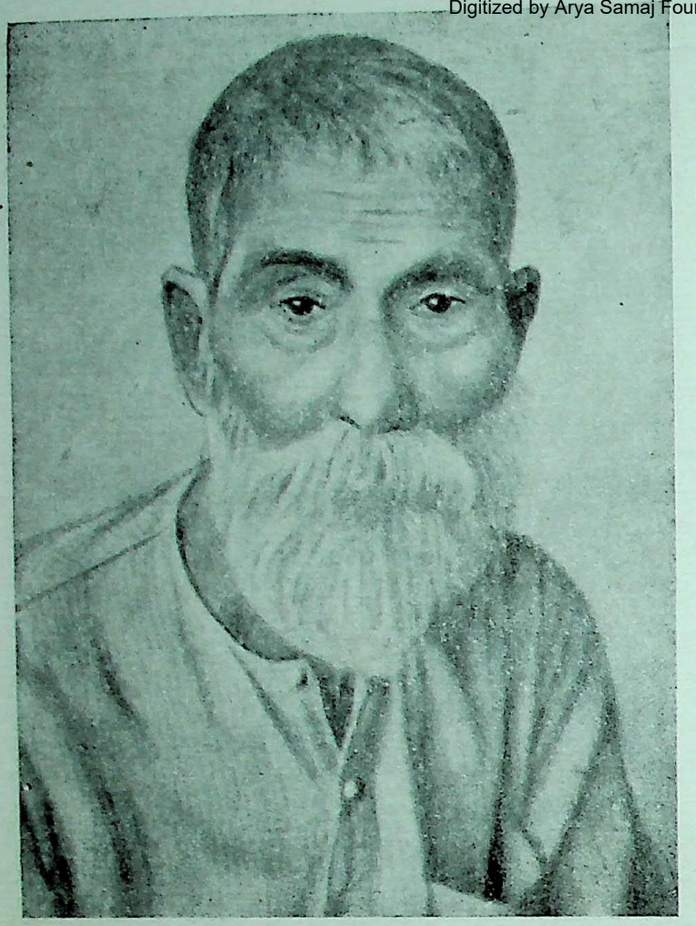

Late Sir P. C. Ray

by Sir Taraknath Palit who donated his life-long savings, amounting to nearly rupees three million, for the development of science in India.

At Calcutta University, Prof. Raman worked on a number of experiments, which included Interference and Diffraction of light, Rayleigh scattering, Birefringence due to electric and magnetic fields, viscous flow and stress, magnetic susceptibilities of gases, liquids and solids and ray diffraction in liquids and solids. His investigations on Light-scattering led to the discovery of the famous "Raman Effect" in 1928 for which he was awared the Nobel Prize.

In 1933, Prof. Raman accepted the Directorship of the Indian Institute of Science, Bangalore, and Prof. Krishnan joined the Association as the Mahendra Lal Sircar Professor in 1934. Before this, Prof. Krishnan had worked as a scholar under Prof. C. V. Raman. He had collaborated with Prof. C. V. Raman in the discovery of the Raman Effect.

Towards the end of the twenties Prof. Krishnan developed an original method for studying the magnetism of crystals at the University of Dacca where he was posted as the Reader in Physics. This work was very much appreciated in the field of science and Prof. Krishnan was elected a Fellow of the Royal Society in 1940.

The Association offers two Gold Medals—Dr Bimala Charan Law Gold Medal and Joy Kissen Mookerjee Gold Medal—for outstanding work in the field of science. Some of the recipients of the medals have been Prof. A. Einstein, Sir Henry Dale, Sir Robert Robinson, Sir Alexander Fleming, Prof. Robert Millikan, Sir E. J. Russell, Sir James Jeans, Mme. Irene Curie and Dr. S. S. Bhatnagar.

The Association has shifted to its new magnificent building built with the aid of generous grants from the Government of India. The Institute has now departments of Theoretical Physics, General Physics including Spectroscopy, X-rays and Magnetism, Organic Chemistry, and Physical Chemistry.

Under the guidance of Prof. M. N. Saha, Director, the Institute has turned into one of the most important active research centres in India.

The Bengal Chemical and Pharmaceutical Works were founded in 1901 by Acharya Profulla Chandra Ray to utilise indigenous raw materials and modern scientific methods for the manufacture of medicines. New and novel processes have been evolved at these works for the manufacture of a large number of products of reputation. These include synthetic drugs, organic arsenicals, organic antimonials and many other natural products.

The Research Department of the company—Sir Profulla Chandra Research Laboratory—is rendering valuable service to the nation ever since its inception in 1937.

The Bose Research Institute was founded by Sir J. C. Bose on November 30, 1917, two years after his retirement from the post of Professor of Physics in the Presidency College, Calcutta. The main object of founding the Institute was "to continue the fundamental investigations on the similarity of the life phenomena exhibited by the plants and animals, and to train up a band of devoted research workers who will continue this line of work."

The contributions made by Sir J. C. Bose have been acclaimed in the world of science. He has made it clear by his experiments that "by experiments on plants with drugs, information can be obtained about the suitability of such drugs for the treatment of human beings." Sir J. C. Bose analysed the proportions of many Indian drugs to substantiate his observation.

The Institute gets regular grants from the Government of India and the Government of West Bengal.

In the Department of Physics, research is being carried on under the patronage of the Atomic Energy Commission on analytical study of "Transuranic elements and nuclear fission of heavy elements", "use of photographic plates for the study of nuclear disintegration" and the setting up of "medium voltage ray discharge tube".

In the Department of Chemistry, research is being conducted under the Indian Central Jute Committee on "Impregnation of bleached jute yarns with suitable Synthetic Resins". In the Department of Botany research is being conducted under the Indian Central Jute Committee on "Production of suitable mutants in jute by X-ray radiation."

The Institute has got two Research Stations—One at Mayapuri, Darjeeling, for high altitude work, and

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the other on the bank of the Ganga, Folta, for experimental work in the field of agriculture.

The University of Calcutta introduced Science classes in 1904. This supplemented the work of the Indian Institute for the Cultivation of Science.

During the second decade of the 20th century, Calcutta University started a separate University College of Science for the development of post-graduate teaching and advanced research in fundamental and applied science. Various professorships were instituted as a result of princely gifts from Sir Taraknath Palit, Sir Rashbehari Ghosh and Rani Bageswari of Khaira.

Sir C. V. Raman and Sir P. C. Ray, the first Palit Professors of Physics and Chemistry respectively, gave an altogether new lead to higher research work in Calcutta University. It was an age of regeneration of Scientific research in India. The students belonging to the schools of Physics and Chemistry founded by Sir C. V. Raman and Acharya Sir P. C. Ray respectively spread over whole of India. Saha's *Ionisation formula, Bose-Einstein Statistics* and the *Raman Effect* are some of the most outstanding contributions to Science which have been made possible largely through the creation of an atmosphere of research in the University College of Science.

In 1948 the Institute of Nuclear Physics was started. The Institute came into existence as a result of the personal efforts of the Prime Minister, Sri Jawaharlal Nehru. The institute has recently purchased a cyclotron machine from the U.S.A.

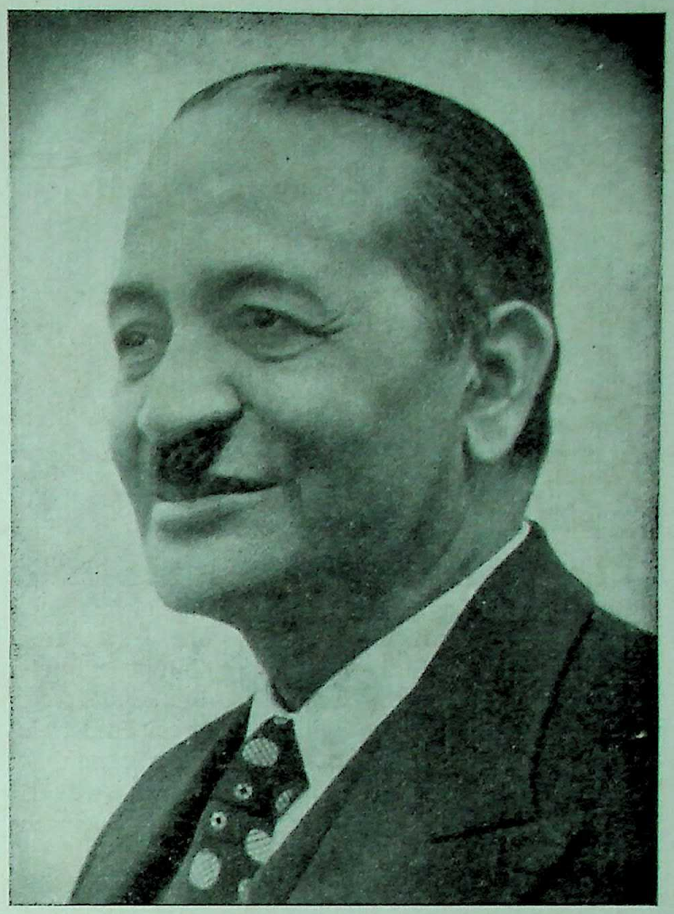
The aim of the Institute is fundamental research in Nuclear Physics, Nuclear Chemistry and Biophysics. The object is "Advancement of knowledge and it is to this objective that the present Institute is dedicated, as far as atomic energy is concerned."

The Institute has an electron microscope, the first of its kind in India. A number of Biophysical problems are being tackled with its aid.

In 1949 the Institute of Radio-Physics and Electronics was added to the Post-Graduate Departments of Calcutta University which together constitute the University Colleges of Science and Technology with generous grants from the Centre. The Institute was started to provide facilities for a three-year course in Radio Physics and Electronics and secondly to undertake and carry out fundamental and applied research in these subjects. Professor S. K. Mitra, distinguished for his work on Ionosphere, is the Head of the Institute.

In 1833 Lord William Bentinck, the then Governor-General of India, set up a committee to deal with the problem of medical education in India. As a result of the recommendation of this committee the Calcutta Medical College was started on February 20, 1835. This was the starting point of research in medical science in India.

Since then research has been carried on in different medical institutions in the country, which has led to outstanding discoveries. Dr. U. N. Brahmachari's Chemotherapeutic research on Kala-azar culminated in the discovery of the synthesis of urea stibamine in 1922. This has been recognised as the most powerful anti-



Dr S. S. Bhatnagar, Secretary, Central Ministry of Natural Resources and Scientific Research

Kala-azar drug throughout the world. This discovery saved millions of lives in India and abroad from the grim disease of Kala-azar.

The Pasteur Institute of Bengal was started in 1900. The Institute imparts training in rabiology. It was the first institute of its kind in India. At present there are six such institutes in different parts of the country.

In 1910 Leonard Rogers emphasised the importance of establishing a school of Tropical Medicine in India for "carrying out investigations on various diseases that are prevalent in the country and to utilise the vast wealth of clinical material for the purpose of researches on and teaching of tropical medicine". But it was not until 1920 that his dream took practical shape and the Calcutta School of Tropical Medicine was founded. Rogers left for England the same year and Mr. Knowles took over charge.

About Rs. 16 million were spent to put the scheme into practice. The cost was shared by the Government of India (32 per cent), the Government of Bengal (31 per cent), the Endowment Fund (24 per cent) and the Indian Research Association (now Indian Council of Medical Research, 13 per cent).

The main departments of the institution are (i) the School Department, (ii) the Carmichael Hospital for Tropical Diseases, and (iii) the Out-patients Department.

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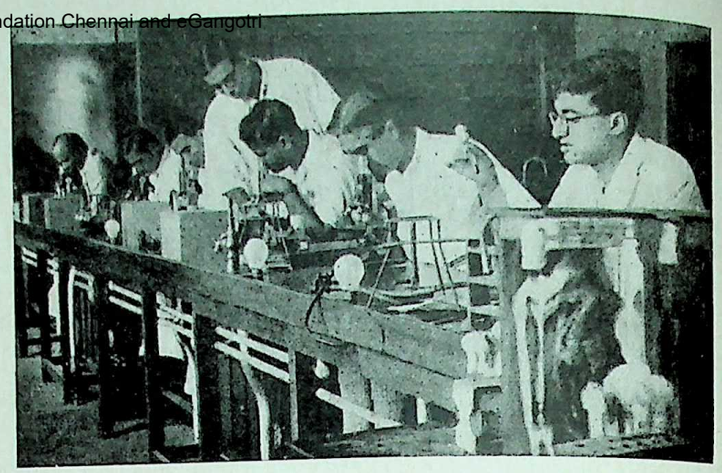
Prof. S. N. Bose delivering his Presidential Address to scholars of the Statistical Institute. Seen along with him are Prof. P. C. Mahalanobis and Prof. R. A. Fisher



At the All-India Institute of Hygiene and Public Health, Calcutta

Ever since 1921 the School has provided for specialised studies in tropical diseases for medical graduates and medical licentiates. Students are drawn from various States of India and from different countries of Asia and occasionally from the U.S.A. and Europe. The School also provides facilities for specialised training in different branches of medical practice and for research for higher post-graduate degrees.

The hospital for tropical diseases and the various out-patients' departments are largely attended and provide clinical material for teaching and research.

Research undertaken by the School includes different aspects of chemotherapy, clinical research, experimental medicine, haematology, and indigenous drugs.

The Indian Statistical Institute was started on December 17, 1931, as a "fact finding agency" using the technique of sampling methods on a large scale. It was mainly due to the unflagging initiative of Prof. P. C. Mahalanobis that the Institute came into existence.

The work in the Research and Training School falls broadly under three heads, e.g., (i) Training (ii) Scientific enquiries, and (iii) Research which is organised in two divisions—theoretical and applied, scientific enquiries and training.

The Institute has conducted important projects of great national significance. The important among these are jute forecasts in Bengal, crop survey scheme in Bihar, crop cutting experiments on sugar-cane and wheat in two districts of Uttar Pradesh, diet survey in Calcutta, living conditions of working class families in certain areas of Bengal and in Nagpur, etc.

The Institute which was first situated in the Presidency College building has now been shifted to its own magnificent building at Barrackpore.

The Bengal Immunity Research Institute came into existence in 1935 as a result of the efforts of Capt. N. N. Dutta. The Institute is one of the important research centres of eastern India where research work has been taken up in various branches of science of Chemistry, Biochemistry, Pharmacology and Bacteriology. The Institute represents an attempt towards the combination of industrial enterprise with scientific research for the benefit of humanity and the country.

The scientific work of the Institute is of fundamental and applied character, along lines likely to promote research in Chemistry, Pharmacy, Biochemistry, Bacteriology, Immunology, Physiology and Pharmacology. The number and character of the different departments of the Institute have been kept elastic. Against the background formed by the above departments, other smaller divisions may arise from time to time in response to need for special research of a topical character, as recommended by the Scientific Advisory Board.

The Jute Agricultural Research Institute of India was started at Dacca, now in Pakistan, in 1939.

After partition the Indian Central Jute Committee established the Institute at Nilganj, four miles from Barackpore. The Institute is making commendable progress under the guidance of Dr B. C. Kundu, its Director. Of late the University of Calcutta has started an Institute of Jute Technology to train students for supervisory posts in jute mills in India.

The idea of starting a River Research Institute in India was expressed by Prof. M. N. Saha as early as 1932.

The Institute was started in 1943 with four laboratories, viz., River Model Laboratory at Galsi Field Station, Tidal Model Laboratory at Belghoria Field Station, Statistical and Hydrological Laboratory with Headquarters at Alipur and Soils Laboratories at Russa. The Institute is rendering technical guidance to the River Valley Projects, e.g., the Mayurakshi Project, the Damodar Valley Project and the Ganga Barrage Project, now taken up by the Government for early execution.

In September 1946 the Central Rice Research Institute was started by the Government of India.

The Institute carries on research in five different sections, e.g., Botany, Agronomy, Mycology, Entomology and Chemistry.

In the Botany section fundamental studies are carried on in genetics, cytology, morphology and physiology. Special emphasis is laid on the breed-

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ing of varieties which will yield high returns and have better nutritional quality.

A special feature of the botany section of the Institute is the maintenance and study of the world rice collection.

In the agronomy section research is conducted on the system of cropping and designing of layouts for all categories of field experiments.

In August 1949 Government of India started the Central Potato Research Institute at Patna. Research is being conducted on the evolution of suitable high yielding varieties for the various regions through introduction, hybridisation and selection.

Some work has been done on the determination of cultural and fertiliser requirements of the crop for different soil types.

About 13 years ago one of the humble workers of the Chittaranjan Seva Sadan, Dr. Subodh Mitra, a distinguished scientist, formed the nucleus of a fund for a cancer hospital and due to his untiring efforts the present magnificent building of the Chittaranjan Cancer Hospital came into existence. The opening ceremony of the hospital was performed by Madame Irene Juliot Curie, Nobel Laureate, in 1950.

The new building was designed by the famous architect, Mr. H. Glass of Vienna.

The hospital is a five storeyed building. The ground floor contains the out-patient department with spacious reception rooms and six examination rooms for different types of cancer.

About 90 per cent of cancer cases at the institute are treated by Super Volt radiation, deep X-rays, Radium and Radio active isotopes.

All sorts of clinical examinations, viz., blood counts, Biopsy and Cancer examinations, Biochemical and Serological examinations, necessary for the detection and treatment of cancer are undertaken.

The Million volt X-ray apparatus which is up till now the first of its kind in India is being extensively used both for clinical treatment as well as for research work.

Besides clinicopathological work the main trend of research work has been directed towards the study of the effect of radiation from Super Volt X-ray and radioactive isotopes to different types of tissues in vivo and vitro, in health and in disease and in clinical as well as in animal experiments. At present this institution is working with four types of radioactive isotopes namely iodine, phosphorous, gold and cobalt.

The hospital has up-to-date library on cancer.

The Central Glass and Ceramic Research Institute forms a part of the chain of national laboratories started after independence under the initiative of Government of India.

The object of the Institute is to carry on fundamental research having a bearing on different branches of glass and ceramic, testing and standardisation, technical assistance to industry, dissemination of technical information, and training of technologists for special work.

The analysis of properties of clays and steatites in India and of the origin of colour produced in glass by different colour arts is being undertaken in this Institute. Dr Atma Ram is the Director of the Institute.

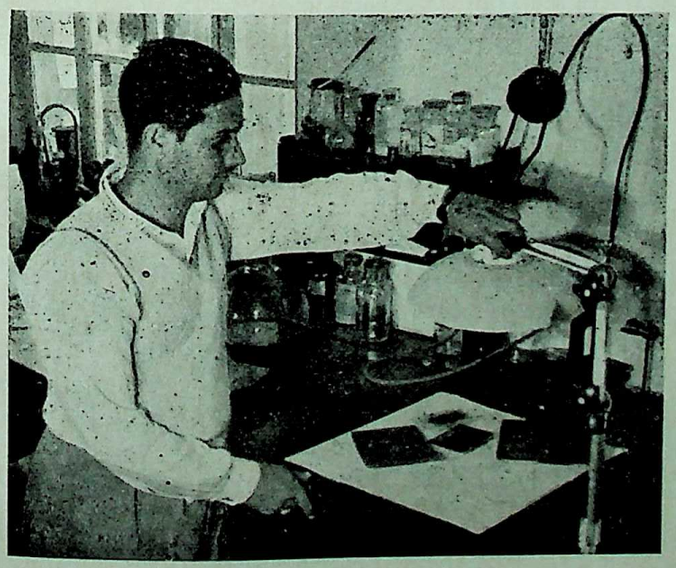
The Central Drugs Laboratory has been established by the Government of India under the Drugs Act.

The chief object of the Laboratory is to grant certificates of registration for patent and proprietory medicines with undisclosed formulae after carrying out the necessary analysis. The Laboratory also carries on work to promote, guide and co-ordinate research on drugs and to disseminate information regarding standards of drugs in tropical climates and to train workers on drugs standardisation and drug research.

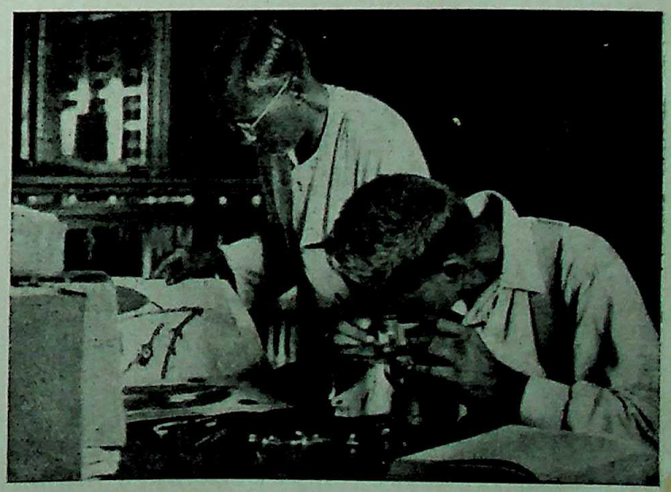
The Research workers at the Laboratory have made valuable contribution regarding indigenous drugs and substitutes for pharmacopolial drugs, blood coagulation, Vitamin B, venoms and hormones.

The Forensic Science Laboratory, first of its kind in India, was started by the Government of West Bengal in 1952 and is situated in the Chemistry Build-

At the Lac Research Institute, Ranchi



In the herbarium, Indian Botanical Gardens, Calcutta



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ing of the Medical College, Calcutta. The function of the laboratory is the Scientific examination of physical evidence found in connection with a crime and to render scientific aid to the Police in their fight against crime.

The Laboratory consists of four main sections, such as, chemical, physical, biological, and ballistics. Some of the latest techniques adopted to deal with the examination of clue materials are: Photomicrography, Ultra Violet and infra-red examinations, microscopy, spectroscopy, sterioscopy, radiology, etc.

Besides the application of tried and true scientific methods to routine cases, the Laboratory deals with research problems in police science under the following three categories such as fundamental research, instrumentation and compilation of statistical data for the individualisation of clue materials.

A liaison officer who is a senior detective officer keeps a close and friendly contact with the police forces of the area served by the Laboratory. There is also provision in the laboratory for the training of police officers in the elements of criminalistics to enable them to appreciate the value of the contribution of the laboratory in criminal investigation.

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Multi-purpose River Valley Projects

K. K. Sinha

THIS year's extensive floods in Eastern India have once again focussed the attention of the people on the problem of our rivers. Eastern Uttar Pradesh, northern Bihar, northern Bengal and Assam were affected by these floods on a large scale. Apart from these areas in India, adjacent territories in Nepal, Tibet, Southern regions of China and East Pakistan were likewise affected.

But floods are not a new phenomena in India, specially in the eastern regions. The 1943 floods in the Damodar river, which flows in Bihar and West Bengal, are still fresh in public memory. The Kosi, rising in Nepal and coursing its way through North Bihar, is dreaded every year by millions of villagers. And so are the river Gandak in Bihar, the Teesta in North Bengal, the Brahmaputra in Assam, the Mayurakshi in West Bengal and the Mahanadi in Orissa. These are of course not the only rivers in the region. It has, in fact, a network of hundreds of rivers including the sacred Ganga.

It would, of course, be wrong to associate rivers only with periodic floods and their devastating effects. Among their major natural functions are flushing and land formation. Even floods have their value if these are not of great intensity. They deposit rich silt on cultivable fields, thus rejuvenating them for several years.

Rivers are also a most useful means of transport and communication. Moreover they supply water for irrigation, domestic, municipal and industrial use. Thus rivers are an important ally of man in his struggle for existence and in his endeavour to build up a civilisation on this earth. As a matter of fact, most of the old centres of civilisation were established near important rivers like the Ganga and the Indus in India, the Nile in Egypt, the Euphrates and the Tigris in the Middle East and the Rhine in Europe. Owing to the development of modern means of communications, this tendency has decreased today. But again the natural advantages of a river are increasingly being realised and rivers are steadily coming to the fore in the general context of development. The Tennessee Valley Authority shares a good deal of credit for this increasing recognition of rivers today.

To begin with, the Government of India dealt with the questions of prevention of floods and provision of irrigation as unrelated problems. However, it has now come to realise that it is not proper to approach the question of developing rivers compartmentally. Rather, an entire river basin needs to be studied against the background of general development of the region which it covers. This *multi-purpose unified approach* to rivers has given rise to several large projects in our country and some of them are well on their way to completion. Eastern India, being essentially a riverine area, has a fair number of such projects. The Damodar Valley Project is the most popular of these. The Hirakud Project in Orissa, the Mayurakshi Project in West Bengal, the Kosi and the Gandak Projects in Bihar, the Umtru Project in Assam—these are some of the others. Some more are taking shape. The Ganga Barrage Project is of course a class by itself. The recent floods are expected to stimulate investigations into river valleys and the planning of new projects particularly in Assam and northern Bengal.

A closer view of some of these major projects and the progress made by them would make us conscious

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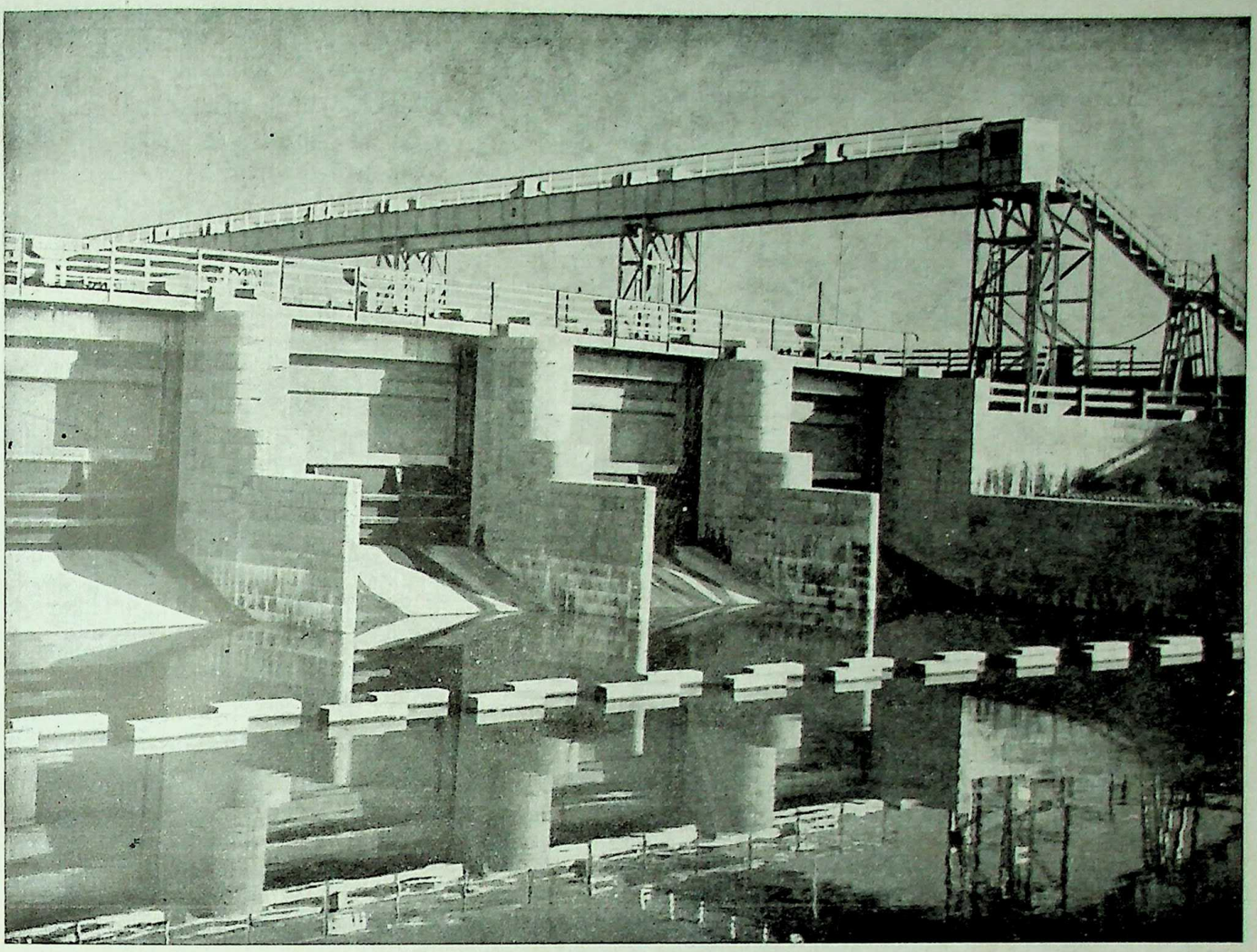

A view of the sluice gates of Tilpara Barrage, Mayurakshi Project

of the vast development work that is going on in the country as well as the pattern of such development in the future.

Damodar Valley Project

The Damodar Valley Project consists of eight dams on the Damodar and its tributaries and a number of hydro-electric stations with a total installed capacity of 240,000 kw. The Project will have a total reservoir capacity of 4.7 million acre-feet and will protect the valley from a design flood of 1 million cusecs. Further it consists of a thermal power station of 200,000 kw installed capacity to even out the seasonal fluctuations of the hydro-power stations. A power transmission grid connecting all these power stations and Calcutta will be erected. A barrage at Durgapur near Asansol and an 85-mile long irrigation-cum-navigation canal which will join the Hooghly river 30 miles above Calcutta, will also be a part of the scheme. It will feed 1,552 miles of canals and distributaries. In the first stage, however, only four dams, namely, the Tilaiya, the Konar, the Maithon and the Panchet Hill are being taken up, and the thermal power station will have a capacity of 300,000 kw.

Like the TVA of the USA, the Damodar Valley Project is administered by an autonomous authority, and has already made substantial progress. The Tilaiya Dam (98 feet) with its power house is complete. The Bokaro power house, the largest in Asia is also complete. The Konar Dam (160 feet) is practically complete. The Maithon Dam (162 feet) and the Panchet Hill Dam (133 feet) are under construction. The Maithon Dam will be completed early in 1955 and the Panchet Hill Dam in 1956. The barrage at Durgapur is expected to be completed by June 1958, but a major portion of the canal will be in operation from June 1957. The DVC grid comprising of 851 miles and 34 sub-stations will supply 1,500 million kwh of energy per annum to an area of 35,000 square miles. Of these, 287 miles have been completed. A large number of sub-stations have also been completed.

The Damodar Valley is one of the richest mineral regions in the world. Its electrification will therefore usher in a new era of prosperity for the country as a whole. And the increase in agricultural production will be worth more than Rs. 350 million per annum. The total cost of the project is nearly Rs. 900 million.

The Hirakud Dam Project

The Hirakud Dam Project is part of a larger pro-

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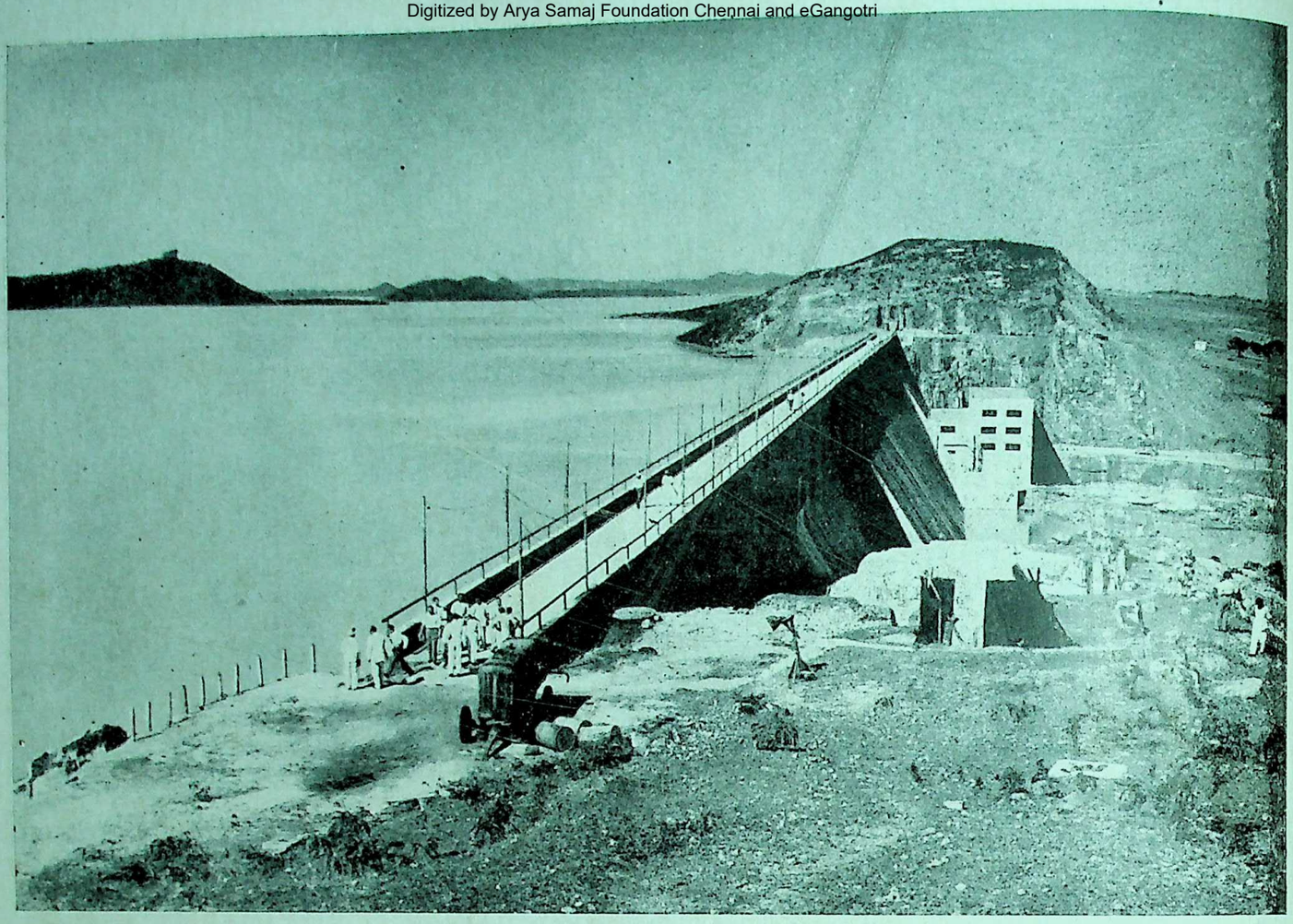

Tilaiya Dam, Damodar Valley Project

ject to harness and control the river Mahanadi in Orissa. The Mahanadi has long been a problem river causing floods, famine and disease for more than a century. Several schemes for harnessing the river were considered. Eventually, in 1937 Sir M. Visveswaraya, the great Indian Engineer, suggested a multi-purpose approach and the idea was concretised into a regular project in 1945. The project consisted of three dams at Hirakud, Tikkerpara and Naraj. The Hirakud Dam was taken up for execution in 1948.

The main dam is a masonry, concrete and earth-filled barrier with a total length of nearly three miles (15,748 feet) flanked by dykes about 13 miles (67,775 feet) long. This will be the longest dam in the world. The concrete and masonry dam will be 3,768 feet long. The maximum height of the concrete portion of the dam will be 200 feet and that of the earth portion 195 feet.

The irrigation system will consist of three canals commanding a total culturable area of 447,800 acres. The total annual irrigated area would, however, be 668,000 acres. The increase in the production of paddy would thus be about 4.5 million maunds. The length of the main canal and branches would be 95 miles, and of distributaries 412 miles.

The installed and firm capacity of power generated in power house No. 1 will be 123,000 kw and 85,000 kw respectively. The power so generated will be carried to the various load centres. This will mean erection of transmission lines—90 miles of 66 kv lines, 310 miles of 132 kv lines and necessary grid substations. The expected load demands in Hirakud are : Lighting and other domestic loads; small-scale and medium size industries; irrigation; mining; and heavy and special industries.

A glance at the mineral map of this area will convince anyone of the vast potentialities of the region. The Government of India and the Government of the State are actively promoting projects of industrial development. Already plans for a steel plant at Rourkella and for aluminium and ferro-manganese industries are well ahead. Textile mills, a paper mill, a cement factory and mining industries are springing up even now.

Out of a total target of 432.4 million cu. ft. of earth work required on the dam, 219.2 million cu. ft. have already been laid, raising the dam to about 77 ft. above the average river bed. The dam needs to be raised another 58 ft., and it is expected to be complete by the middle of 1955. The concrete and masonry portions are also progressing rapidly. The left dyke is almost complete. The right dyke, about seven miles long, is also progressing well. Out of 95 million cu. ft. of earth work required on the dyke, 51.6 million cu. ft.

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of compacted earth have already been laid. Nearly 85 per cent of the work of excavating canals has been completed. Of the distributaries about 30 per cent are ready.

The estimated cost of stage I of the Project is Rs. 707.8 million of which about Rs. 330 million have already been spent. The dam, the dykes and the canals will have been substantially completed by July 1956, and hydro-power and water for irrigation will be available by that date.

The Mayurakshi River Project

This is another multi-purpose project bordering on the two States of Bihar and West Bengal. Essentially, it is an irrigation project, although it will yield hydro-electricity also. The scheme consists of a dam at Messanjor in the Santhal Parganas district of Bihar, 20 miles north-west of Suri, the headquarters of the Birbhum district in West Bengal.

The distribution system takes off from a barrage at Tilpara near Suri from where two main canals run, one on either bank of the river. The main canals on either bank will cross two rivers each, and at the sites of these crossings pick-up barrages are provided (in the case of river Bakreswar the existing weir is to be modified).

Apart from these, the main canals on either bank will negotiate a large number of other streams with the help of aqueducts, syphons, etc., some of which have fairly high flood discharges. The irrigable area (600,000 acres during the *kharif* and 120,000 acres during the *rabi* seasons) is divided into six blocks by the five rivers running more or less in an east-west direction. Four of these blocks are to be irrigated by four branch canals whereas the blocks in the extreme south and extreme north are to be irrigated by the tail ends of the two main canals. In addition, the scheme envisages supply of water for about 30,000 acres to be irrigated in the district of Santhal Parganas, Bihar. Hydro-electricity generation is an insignificant aspect of the scheme and there is provision for two generating sets of 2,000 kw each, they will supply firm power of 2,000 kw and a seasonal power of another 2,000 kw during the rainy season. It is proposed to link up the line with the DVC grid so that the advantage of the thermal station of the DVC may be taken in years of severe draught when there may be shortage of water for a month or two. The cost of the Project is Rs. 161.1 million.

As regards the progress of the Project, the Tilpara Barrage has already been completed and irrigation was started in 1951. Nearly 90 per cent of the dam is ready and the rest of the work is expected to be over in early 1955.

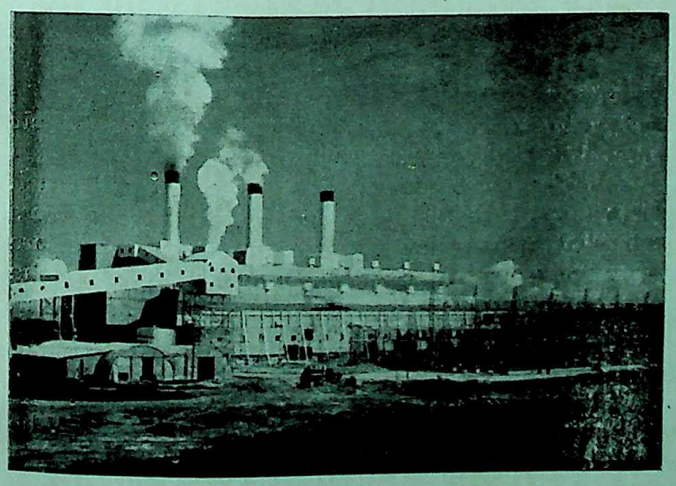
The Kosi Project

A great deal of controversy has centred round the river Kosi. It has been violently changing its course. From time to time several projects to control it have been planned and discussed by the leading engineers of the country. Ultimately, the project as finalised consists of a barrage at Hanumannagar, a short distance north of the Bihar-Nepal border. It will divert the waters of the river into the eastern Kosi canal for irrigating certain areas (1.39 million acres) in Bihar, and for providing control point on the river to which the dykes could be connected. Flood banks are also to be constructed on either side of the river up to a distance of 70 miles from the barrage. On the left side, it would begin near Belka and extend up to Rangaon 77 miles below. The Kosi would thus be diverted to its old course for flushing. A canal from Chhatra that will irrigate an area of 180,000 acres in Nepal will also be included in the project. The project will cost Rs. 370 million.

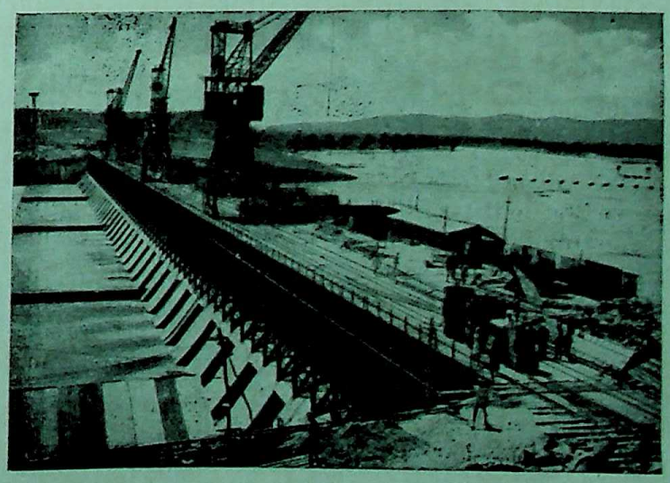
An agreement between the Governments of India and of Nepal has been signed and preliminary work on the construction of roads, railways, aerodromes, colonies, etc, has already begun. The construction of the barrage will commence in 1956 and will take four years to complete.

For the construction of dykes the Chinese method of mobilising large masses of people is being studied

Bokaro Thermal Station, Damodar Valley Project



Left spillway portion of Hirakud Dam



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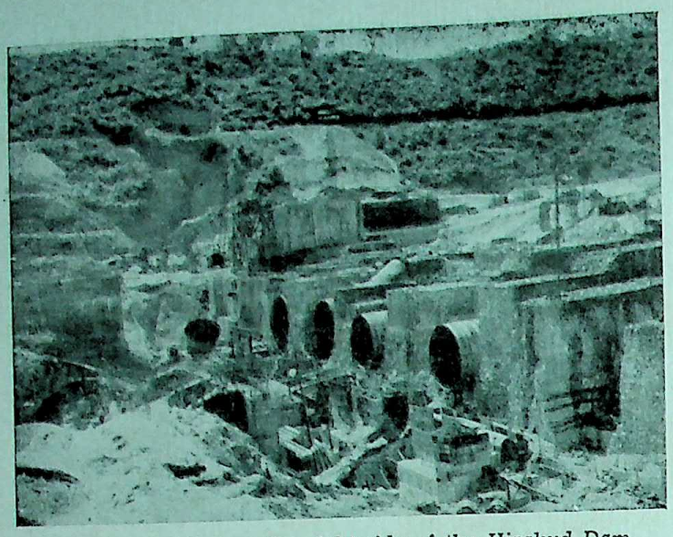
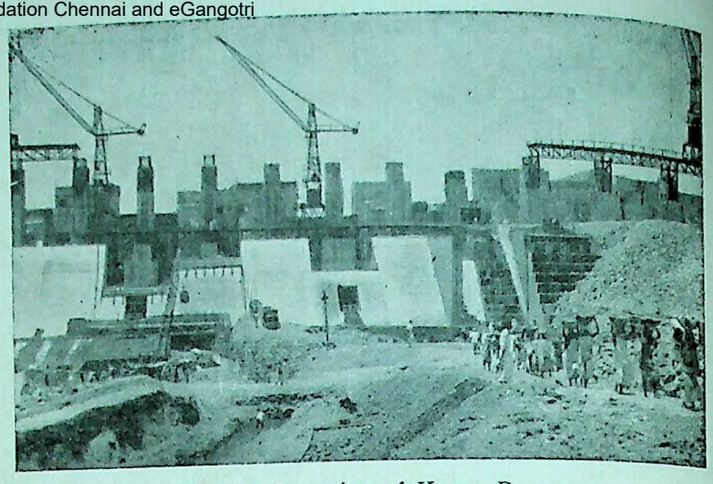


Penstocks erection on the right side of the Hirakud Dam



Concreted portion of Konar Dam

and adapted. January 15, 1955, is the date fixed for starting the large scale construction of dykes.

The Ganga Barrage Scheme

As already mentioned, the Ganga Barrage Project stands apart from the other multi-purpose schemes not only in Eastern India but in the country as a whole. The problems of the Bhagirathi-Hooghly are manifold, such as resuscitation of moribund rivers in West Bengal, maintenance and improvement of the navigability of the Calcutta Port, provision of irrigation waters, opening up of a direct and perennial navigation route between Calcutta and the upper reaches of the Ganga, and subsequently also between the Ganga, the Teesta and the Brahmaputra exclusvely through the Indian Union. All these objectives are to be achieved by this project. In its first stage the project, in brief, consists of a barrage across the Ganga at Farakka carrying a rail-cum-road bridge, a navigation-cum-feeder canal taking off from above the barrage, and another barrage across the Bhagirathi just above its outfall near Jangipur. The first stage of the project will cost Rs. 398.7 million. The investigation of the flushing-cum-irrigation aspect of the project is being carried out. This important project is under detailed investigation and at the designing stage at present.

The Gandak Project

This project lies in Bihar and will benefit the districts of Saran, Champaran, Muzaffarpur and Darbhanga. The Gandak is the fourth biggest river in India. The project, in brief, consists of a barrage across the Gandak with a canal-head sluice for diverting the river into canals taking off on either side, for irrigation, flushing, silting up low-lying areas, generating hydro-electricity in the upper reaches of both the canals and the barrage, and for opening up of communications with the right bank of the Gandak, particularly the Nepal territory. The canals will also cover parts of Uttar Pradesh and Nepal. The area commanded in Bihar by the canals will be 3.19 million acres. The cost of the project is approximately Rs. 250 million. It has not been included in the First Five Year Plan.

There is no doubt that the completion of these major projects for harnessing and utilising the waters of some of the rivers in the eastern region of India will ensure rapid expansion and modernisation of agriculture and industry in this region and will thus usher in an era of prosperity and plenty. And, let it not be forgotten that each of these projects is only a small part of a big scheme, and that more such projects for harnessing other rivers are under investigation.

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BIRD-LIFE (*Contd. from page* 37)

Tripura, Manipur and Assam were wholly colonised after the retreat of the glaciers by Malayan forms, while the rest of India was colonised by birds spreading out from South India. That was an initial differentiation on which latitude, altitude, humidity have engraved their own varied patterns. Orissa and Bihar can be presumed to have been nearer to the South Indian source of immigrants, but West Bengal was as accessbile to South Indian bird-forms as to Malayan.

Though the Western Ghats and the Eastern Himalayas and the Assam Hills have the same humidity, the races having evolved from different genetic stocks bring about much change between their respective bird populations.

Besides the Malayan archipelago extends much farther south than Ceylon and so when the glaciers retreated many essentially tropical forms (therefore more gorgeously plumaged), inured to cold by the closeness of glaciers over a long period, also spread northwards into Assam and eastern India. So we get some species in eastern India which are not represented by any subspecies either in South India or elsewhere in India. The Malayan influence can be felt along the Himalayas right up to the valley of the Gandak.

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Arts and Crafts

Ajit Mookerjee

IN order to appreciate the popular art tradition, we need to put ourselves as nearly as possible into the state in which folk minds operate. In simple language, the folk artist believes profoundly in what he is doing. He obeys the dictates of tradition and respects the art his elders have produced. In each generation the impermanence due to the cheapness of material or heavy rainfall stimulates the desire to hand on skill from mother to daughter, from father to son. The matter of "fashion" does not enter in it; for art objects are executed essentially for household purposes, and the producer is often the consumer. This domestic tradition is the bedrock upon which the folk arts and crafts of Eastern India are founded. The universal prevalence of the traditional story-telling, dancing, singing festivities and ceremonies, along with processions and social gatherings, does much to create conditions necessary for vigorous folk art.

During festivities, the womenfolk of this part of the country are in the habit of drawing Alpona designs on floors, walls and courtyards with a small piece of cloth soaked in an emulsion of ground rice. The motifs of the designs include conventionalised flora and fauna, circles in series, spiral or curvilinear devices, series of short lines, footprints or fragmantary pictures illustrating legends and stories.

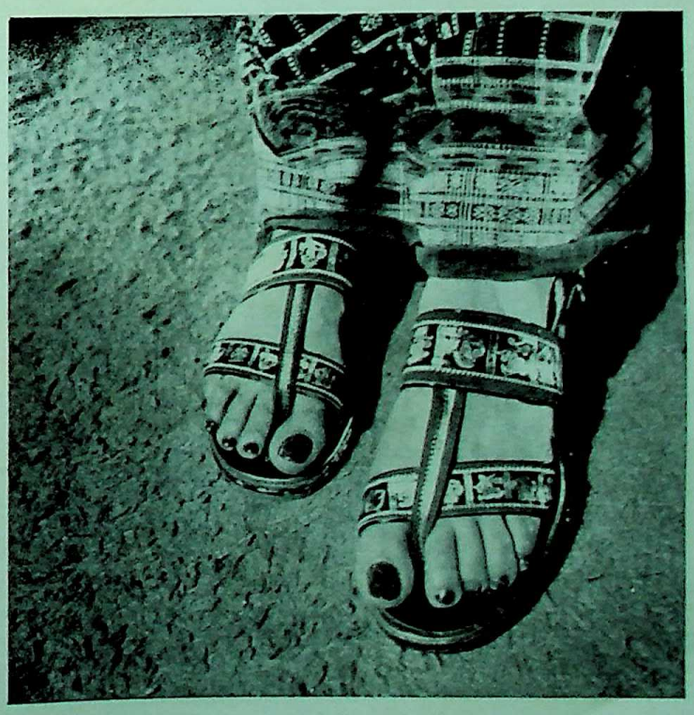
The vital power of the folk artists of Eastern India is perhaps best shown in terracotta figurines of mother and child. In these the mother expresses herself in the most universal manner. The feet, the thighs give power and elasticity to both the standing and sitting mothers as each, with primordial tenderness, embraces her clinging offspring. There is a total disregard of accuracy in anatomical details but in each case the mother is full of life, possessing a natural, quiet distinction, an aloof pride of fulfilment.

Of great interest are scroll and patua paintings. The patuas are hereditary painters, having inherited their skill from their forefathers. They compose their own songs known as Patua-Sangit and depict them on paper-faced cotton scrolls. Both the epics and folk literature furnish the material for these verses. On the other hand, the theme of the Kalighat patuas deals with everyday life, family scenes, animal life and social satire. The motive behind all these paintings and drawings is partly traditional and partly individual, i.e., depending on the genius and skill of the particular painter.

Kanthas (embroidered wraps), however, are made by the women of all classes, particularly in Bengal. They take from six months to a few generations to make one Kantha. The colour scheme, the distribution of characters and the style vary from Kantha to Kantha. When spread out, a Kantha shows its grandeur, revealing the artist's depth of imagination, taste and skill. It is a treasured possession in every home.

Earthen vessels of Bengal, Bihar, Assam and Orissa are extremely varied in form. Painting occurs generally on ceremonial pictures. Geometrical devices, fish and flower motifs and inter-locking circles are commonly executed on a red or black slip. The potters and their womenfolk make terracotta dolls and toys and idols. The objects are made by two processes—by hand and by moulding. The hand-made dolls and toys are fashioned by pinching, using pellets of clay and working the clay until the desired shape is obtained. Sometimes the eyeballs or the ornaments of the figurines are shown either by punctures or by grooves. These figurines are baked either in slow fire or rice husks or in the sun. In rare instances they are painted. The height of these dolls and toys is three to five inches, never exceeding one foot. The droll figures which occasionally come out of the potter's mould show an overwhelming sense of humour. Of the many

Sambalpur sandel and sari



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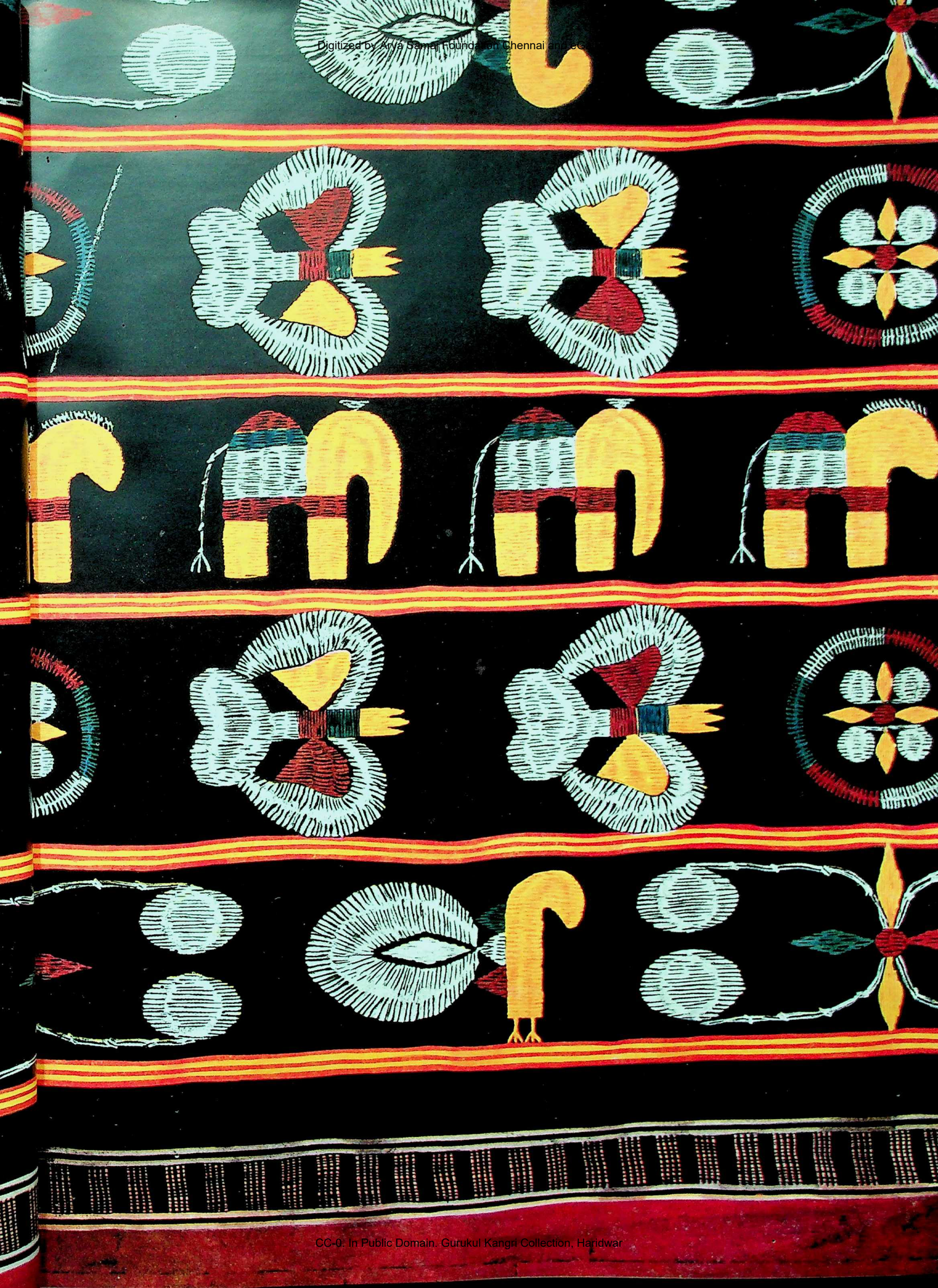

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Patua painting, Orissa

representations of animal figures by the potters, the cow and the calf, horses, birds and elephants bear the mark of a very old continuous tradition.

From the earliest times, Eastern India has made the art of weaving a speciality. The industry is spread all over the region and almost every village possesses a number of looms. From the artistic point of view Murshidabad silk saris, Assamese mekhalas, Manipuri naishemphi and Sambalpur Vichitrapuri sari are most important. Sataranjis of Bihar are cotton carpets woven with thick hand-spun threads. Usually, they are made with brown and white strips, but for smaller sizes other colour combinations are common. These are used as seat coverings.

The knowledge of metallurgy is both old and widespread in this region. The necessity of a thorough daily cleansing of all domestic utensils by scouring with sand and mud makes raised decoration unnecessary. The only decoration to these vessels, whether cast or hammered, is by means of incised decorations. The gracefully shaped pitchers (Kalasa), betel-nut cutters (Janti), small jugs (Ghati or Lota) betel-holders (Dabar-bata), and toilet boxes are notable examples. These articles are incised with floral and linear designs, fish and bird motifs, and figures of divinities. The ornamentation is incised with chisels, making bold, unbroken, or dotted lines.

For the purpose of ritual ceremonies, ornamental copper plates (Puspapatras) of different sizes are used for flowers and other offerings. Panchapradips, temple lamps, are of infinite variety: the most characteristic are the standing lamps in the form of a woman, holding in both hands five shallow bowls which are used as lamps. Bells called *ghantas* are of the ordinary bell shape. The handle is decorated with foliage ending in a bird finial, usually a Garuda. Tray stands, of which the main motif is bull or peacock, are used for holding votive offerings. It is akin to the Nepalese style of brass and bell-metal work.

It is interesting to note that the brass workers do not use any tracing or pattern. They rely on a small hammer held in one hand and an iron graver in the other. This traditional workmanship in metal is handed down from father to son; and their instinctive sense is shown in the continuity of pattern and design over a great period of time. The workman plies his craft sure of himself; and the designs and patterns of several hundred years ago are faithfully worked even today.

The art of basketry is widespread in the region. The materials used for their manufacture are flexible creepers, bamboo, reeds, grasses, palm and date-palm leaves. Great care and skill are necessary for the preparation of the material for basket making. The quality of the finished product depends largely on the material used. Canes and bamboos are split and then subdivided and twisted until the desired warp or weft is obtained. The delicacy of the products resulting from these operations has been aptly described in the proverbial Bengali saying that these "could be rubbed on the eye without hurting".

The finished strands are then buried in muddy water, preferably under hyacinths, for a few days. Apart from giving durability, this process is an additional protection against the ravages of wood-beetles. The natural colour of the material is changed or modified by dyeing it in vegetable colours. The juice of the

Toy (terracotta) Singhbhum

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gab fruit is in universal use for producing a nut brown shade in baskets.

The principal technique of basket-making is that they may be either woven or coiled. The woven type is of a definite pattern made up of strands of warp and weft. The warp is arranged in a more or less fixed position, while the weft crosses and recrosses it; and is interwoven singly or in pairs. The composition of the basket and its decorative designs and patterns depend on the width, colour, and other features of the weaving materials, as well as on the methods of weaving. The principal types of woven baskets are chequerwork, twilled-work, wickerwork, and twined-work, each in several varieties.

For ornamentation, many geometrical designs, foilage patterns and human and animal forms depend upon the structure and colouring of the different strands. Coloured ornamentation is done by employing material of natural colour, use of dyed materials, and addition of beads, cowries and other objects. The most striking artistic effect is obtained by simple lines, bends, spirals and geometric designs. These are adapted to the weaver's fancy and to the general form of the different objects. The design of the basket is modified by breaking, bending and setting the materials at different angles.

Toy (terracotta) Singhbhum

Wooden doll, Orissa

Artistically, two kinds of mats are noteworthy: those made of Madur grass and those made of Sitalpati grass. Mats of an excellent quality called Sitalpatis are made in Assam border districts. These are famous both for high class quality and workmanship. The industry is entirely in the hands of women. "Parents receive a heavy compensation from the men who marry their daughters, the amount being proportioned to the skill in making Sitalpati mats." Figured Sitalpati mats made in the districts of Sylhet, Tripura and Midnapore are renowned for their fine quality and design. Mats ornamented with ivory strips and beads are also made. Special mention should be made of some well-known crafts of the peoples of Tripura, Lushai and the Naga hills, who have retained more or less a primitive way of life. The ancient culture of the people of Tripura is best expressed in their textile products. Riha and other textiles are produced in very limited quantities. They are still considered to be household products and the women weave just as much as they require for their own personal use. The plain Tripura textile designs are greatly influenced by mat weaving. This is very clear from the ribs that often cover the entire piece. The dominant designs are chequered and geometric.

The grouping of colours has also a primitive quality and is often skilfully contrasted creating not only an exotic but a pleasing effect. Crimson is the most fav-

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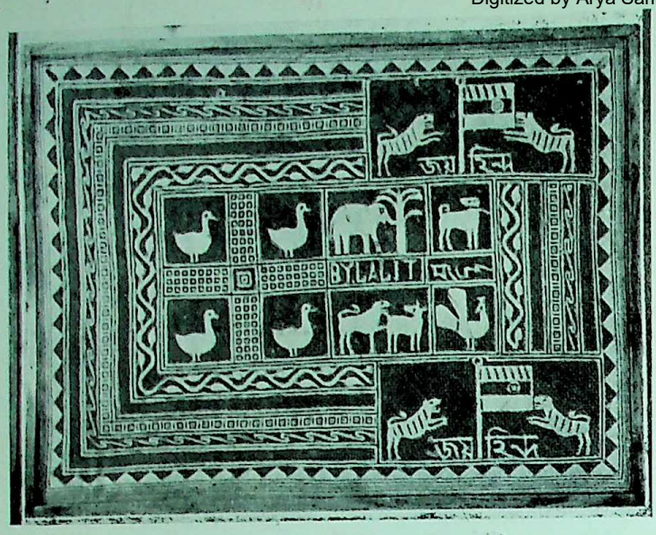

A mat from Tripura

ourite colour and combinations of colours like red, blue and yellow create an unusually bright effect. The border is usually of some shade of one of the colours used on the body of the textile. The weavers often give a modern touch without, in any way, spoiling the traditional beauty of the primitive design.

As in Tripura, the textiles produced by the Nagas are characterised by their primitive designs, quality and colour. Their favourite colours are maroon and black. The designs are mainly abstract figures and highly stylised representations of human beings and animals. The craftsmanship of the women, who weave the textiles on portable handlooms for their personal use only, is indeed very fine. The popular Tongkhul Naga chaddar's colourful designs of various motifs, symbolising animals, butterflies, the universe with the planets and the stars and flowers, is a unqiue example of the main characteristics of tribal art in India.

The Nagas are also famous for their primitive wood carvings. The designs are mostly totemic and naturalistic representations of the objects they see around them. The Nagas are very fond of pure colours like white, red and black and combine them together with great effect. Their carved spears, bows and arrows are attractive, especially because of their remarkable colour combinations.

Both Naga men and women are very fond of jewellery, which is generally made of brass. Most of it is of spiral designs and suggests the great influence of cane work.

The Lushai hill people are famous for their coloured textiles which are used as bedspreads. Red, green, yellow and blue are the predominant colours used. The Lushai shoulder bags, with their floral and geometric designs, are famous for their artistic quality.

It is not easy to find a satisfactory interpretation of the meaning of motifs found in different crafts, as the same motifs may be interpreted in different ways, and the same idea embodied in different forms. The objects of drawings, although meaningless in any one place, may have a very definite meaning in a different place. There is no difference between the "ageless type" of figurines, human or animal, whether they are worshipped or played with. Objects like Sasthi, mother and child, horses and *ghatas* are used as toys by the children and once they are consecrated, they become religious objects. A Vrata-Alpona forming the basis of the ritual, loses its significance and sanctity immediately the ceremony is over. The motive may or may not necessarily be symbolic, or the result of a religious impulse.

It is interesting to note that some forms and motifs found in various articles of this part of the country bear a close resemblance to the ancient arts of the Indus Valley. Technically, and even artistically, there are very strong reasons for claiming a direct relationship of the ancient world with many of the forms and symbols of Eastern Indian folk arts and crafts.

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Music

Dilip Kumar Roy

IT has been contended by some thinkers that it is geography which makes history. The statement is too trenchant to be fully true. No single doctrine can explain the multiplicity of flora and fauna which redeem the clay of life. And yet the above statement does contain a measure of truth. We will here consider, among other things, how far it is true of the musical development of what we may call, geographically, the Eastern India: Bengal, Bihar, Assam and Manipur.

These States have one characteristic in common in that they are nursed by marvellous rivers and dominated by gorgeous mountains. To a Bengali or a Bihari a river is more important than the hills; the Assamese are probably equally fond of both, while for the Manipuri the mountains, naturally, hold a fascination which cannot be rivalled by any other aspect of nature.

But it is significant how the one or the other has inspired the people of these States to create their songs. The mountains have impelled them to compose songs which fill the heart with an overawing sense of the Vast, the Mystic, the Unattainable. The rivers, on the other hand, being more intimate and real to their daily needs, have influenced their minds and led their emotions to ripple along in unison with the ever-flowing lapping of its pauseless waters.

In general terms, it may perhaps be said that the mountains have inspired us to compose the classical music, whereas the rivers have stimulated us to create what is known as folk-music. The finest flowerings in classical music in Eastern India are to be found in the realm of Hindustani music whose other name is the *Raga*-music. The other variety, the folk-music, has found expression in our *kirtans, sari, kajri, qawali, ghazal, baul,* etc.

In the province of *Raga*-music we find the great musicians excelling in complicated modes and rhythms, while in that of folk-music we find the common man humming like bees or carolling like birds in the simplest of lilts and rhythms. In *Raga*-music we find simple measures of four-four (*trital*) or three-three (*ektal*) coexisting side by side with what are called *vishama-padi tals*, e.g., *jhamptal* (two-three) or *teora* (three-four).

But in folk-music one finds the tunes flowing with clear-cut stresses either at intervals of four *matras* (units of time) or three *matras*. And this is as it should be because the more impressive and complicated rhythms—in poetry as well as music—can only evolve with our own musical evolution.

The more elaborate metres (*chhandas*) in Sanskrit, English or Bengali came to be stylised with time. The ear in its noviciate days can only find joy in the simplest of lilts conveyed through trenchant hammer-like strokes.

> Who goeth a-borrowing
> Goeth a-sorrowing

is easy to follow. But not so easy to follow is the delicately cadenced blank verse:

> To be or not to be: that is the question
> Whether 'tis nobler in the mind to suffer
> The slings and arrows of outrageous fortune,
> And by opposing end them.

The one impels us as it were to leap to our feet and dance in step. The other recalls us to the deep rumble of the oceans vibrant but muted in the heart. This is, broadly, the difference between the homely and the classical.

The folk-music ministers to our daily needs, makes us forget the toil and moil of life in a dip into the refreshing currents of untrammelled melody

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dancing blithely as if there were not a care in the world, e.g., in our *baul, bhatiali* and *sari* songs. In these there is always a kind of spur to speed you on, or, if you will, a loving encouragement to let yourself be carried along on the crest of mystic emotion but mystic not in the sense of touching dream heights, but in that of journeys ending in lovers' meeting.

Most of the folk-songs in Eastern India derive from such an easily perceptible impulse which is within the ken of its children of the soil. Some of these may sound a little primitive on first inspection, but when heard with the inner ear one perceives often a deep yearning, a haunting call of the mystic. To quote from an old *bhatiali* song:

O mind, thy oars I ply and ply,
I've rowed for ever in vain:
But when shall I the shore espy
Beyond the eddies of pain?

Such yearnings have been picturesquely limned in our *kirtans* (devotional songs) which are sung not in Bengal alone but in the whole of Eastern India. This was borne in upon me as a living reality through a marvellous experience which, being germane to my present theme, I may as well relate in brief.

A few years ago I went to Silchar in Assam on an invitation to preside over a musical conference. There I was invited to a dance of the Manipur settlers in their village home. It will remain for me an unforgettable evening.

I saw eight Manipuri maids dancing in a kind of glade enringed by *bakul* trees. The eight girls represented the eight principal comrades of Radha and Krishna.

It was exquisite: the dancing, the singing, the *mridanga* (drum) playing, the candles lit under the canopy of stars! But what thrilled me most was that they were singing, in Assamese, *kirtans* and their variants, which, along with the *tal* (given by the *mridanga*) were familiar to me.

In fact I could sing with them all through, so familiar were their tunes if not all their songs. But even this is not all. From time to time they broke out into original Bengali *kirtans* and one of them, famous in Bengal, was composed half a century ago by the famous devotee, Krishnanda Parvriajak, an all-India figure among our mystics. I will translate a few lines of this famous Bengali song which I had heard in my boyhood days, sung by the great *bayadere* Gauharjan of Calcutta, at the Marble Palace.

O Yamuna, ever rippling on!
Art thou the stream that flowed of yore
In Krishna's festive Brindaban,
Presiding like a Fairy Queen
O'er beauty's own dominion?
But where then are they gone who once
On thy banks revelled in song and dance,
Putting the heavens to shame?
Where is our Blue Lord and His friends?
Where is the Light that never ends
The thrill that none can name?
Where are the maids who flocked to sing
And laugh in joy with our peerless King,
When Radha with Him whirled?
Why silent is their dear footfall,
The ringing anklets' mystic call
And the Flute that witched the world?

O liquid Grace reveal to me
Once more what we no longer see:
The One who came to fulfil
Our world with His deep beauty's bliss
That His twin feet I may now kiss
And clasp in woe or weal.

Such *kirtans* and *bhajans* have grown abundantly in Eastern India as though native to the soil, even as science and technology have grown in the West. The reason is that we (dwellers of these rich plains, plentifully irrigated by gorgeous rivers and of the valleys presided over by sentinel mountains) have, on the one hand, imbibed something of the ever-babbling music of our rivers and, on the other, developed a spontaneous kinship with the spirit of meditation symbolised by the vast snow-ranges glittering in their sunlit trance.

And then there are the rich blue-shimmering forests which with their added appeal of green grandeur and sleep-girt loveliness have called to us, as in Bihar and Uttar Pradesh, inspiring in their turn the delectable songs of the great Tulsidas who so signally stimulated the human heart's native urge to worship holiness, beauty, high ethics and divine compassion of which Rama stands today as an ever living symbol, so much so that beggars as well as *bayaderes* sing his simple songs saturate with the heart's adoration of all that the great God-man came to foster in the common man: namely, nobility, chairty, purity, and friendliness to all who are drawn by the divine values. I remember how once I learned, in Bihar, from a street singer a lovely song of Tulsidas:

Sitapati Ramchandra Raghupati Raghurai

The simple soulful songs which welled up like an artesian spring from the depths of this poet-saint's lyrical heart are not easy to translate because it is not easy to carry over the time-old Indian associations and images which have crystallised around Rama, not to mention his great achievements as a divine warrior, as, for example, in his famous *bhajan* on Rama which I learned in 1924 from the great *bayadere* Janki Bai of Allahabad (for exigencies of space I can give here only four lines of this immortal song composed by Tulsidas in his favourite *saptamatric* measure):

Siri Ramachandra kripala bhaja mana harana
bhava-bhaya darunam:
Nava kanjalochana kanja mukha kara kanja
pada kanjarunam.
Bhaja dinabandhu Dinesa danava-daitya
vamsanikandanam:
Raghunanda-ananda kanda kosala-chanda
Dasarathanandanam.

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The vast tracts of Bihar, Uttar Pradesh and Madhya Pradesh are still permeated by the spirit of this great poet-composer who brought to Hindi *bhajans* a lyrical beauty instinct with devotion and exquisite in their idyllic appeal of lovely poetry, flawless rhythms, ringing rhymes and above all, a deep fervour of the heart that lifts our lives above our petty preoccupations with self and greed, inertia and worldly attachments.

Tulsidas was not by any means a simple rustic. He was well versed in the ancient lore of the scriptures and has bequeathed to us a considerable number of beautiful couplets in Sanskrit in praise of Ram. But when he turned to compose in Hindi he steered clear all through of the erudite and pretentious turns of phrases and chose but the simplest of similes and images with the result that what he said went straight to the hearts of millions, the simple hearts of the masses avid of the simple joys and moving tales inculcating the highest moral and spiritual precepts.

A devotee of high stature and a pundit of no mean accomplishments, he yet followed religiously the promptings of his heart rather than those of the intellect, because he had realised through his native humility that one must write from the heart to be able to capture the hearts of others. That is why in the very first canto of his immortal *Rama-Charita manasa* he confesses with a charm all his own:

A poet nor finished speaker am I
Nor vaunt the artist's mastery
Oe's the subtleties of rhythm and rhyme
No critic am I—no judge sublime
Of the high technique of verse: I write
Only for those who thrill in the Light
And Bliss that Rama to us can bring
For these, His devotees, I sing.

No wonder the masses responded gratefully to the "songs" of one who wrote for the unsophisticated of the hallowed deeds of one of the greatest and noblest *Avatars* who lived for the common man and fostered through all his tribulations the bedrock codes of simple morality and spontaneous nobility. In the *bhajans* of Tulsidas which are sung all over North India we find a flowering of the simple heart's simple quest after the simple melodies sung with a simple technique.

And these are so soul-stirring because the art here stems from the soul's pure perception of natural rhythms and rhymes flawless in their evolution and, withal, derived from the soul's natural and ardent adhesion to what is beautiful without being ornate and appealing without being awe-inspiring.

The same simplicity chracterises the lyrics of the Pleiad of Vaishnava poets who flourished in Bengal for several centuries: Joydev, Vidyapati, Chandidas, Govindadas, Jnanadas, Sahishekhar, Nrisimha Das and others down to our day. It is not possible to deal adequately with the musical and lyrical beauty of these in a brief survey. Only a few salient features of their achievements are all that can be noted here.

Joydev's *Gitagovinda* marks an era in modern Sanskrit in that his songs, composed in mellifluous rhymes with a wealth of assonance and exquisite alliterations, at once intoxicate the heart by their euphony. And this goes like pure wine straight to the head and with such a swift assault that one almost tends to forget what is conveyed through the words because of the sheer sense-obliterating power of the melody, lyrical as well as musical.

Some high-brow pundits have, pontifically, held this as a defect, contending that sound in poetry should not subdue the mind's innate thirst for the meaning conveyed by the words. But a superficial criticism like this can hardly be deemed valid because Joydev's verses are pre-eminently songs and should be judged, first and last, by their merit qua songs.

All verses are not songs. Verses which grow even a trifle heavy with the load of thought or mental images forfeit their wings which are the indispensable apanage of a true song. It has been said that if prose walks, verse runs. One might add that if verse runs, a song soars. And this soaring power accrues to the song through the twin wings of *Chhanda* and *sur* (metre and melody). Joydev's poetry possesses both these wings and as such must pass as ideal songs. Can the ear resist when the great singer trills like a bird:

Chandana-charchita-nilakalebara-pitavasana-Banamali
Keli-chalanmani-kundala-mandita-ganda-yugasmitasali.

Unfortunately, however, lines such as these are not amenable to translation least of all into a language like English whose temper is so foreign to the temper of Sanskrit. English is a great language but Sanskrit has a grandeur born of its oceanic flow and rumble and its music of anklets and temple bells which no modern language can rival.

But though Joydev wrote *padavali* in Sanskrit, the magic of his irresistible melody moulded more or less most of the poets who came after him in Bengal. Of course the Bengali language (or any other for that matter) could not possibly hope to emulate the magic of Sanskrit metres, especially those Joydev lifted up to a height of sheer music which has been rarely (if at all) surpassed even by his great predecessors.

But his successors gave us a rich compensation of *bhava* (the heart's substantial yearning) which Joydev lacked, inevitably, because *bhava* was not his forte as it was of poet's like Vidyapati, Chandidas, Jnanadas, Govindadas and others. It is not possible to present here even a summary review of their achievements in verse and music.

Nevertheless I will give here a famous Bengali *kirtan* translated by Sri Aurobindo, a song composed by the great Chandidas of deathless fame. Its theme is Radha's complaint laid at the door of Krishna who, as is well known, wrenched her off her moorings of life with the call of His magic Flute. So Radha sings in love's lovely anger that she would fain be revenged, she would (she sings):

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Die and be born to life again
As Nanda's son, the joy of Braja's girls,
And I will make thee Radha then,
A laughing child's face set with lovely curls.

Then I will love thee and then leave;
Under the codome's boughs when thou goest by
Bound to the water morn and eve,
I'll lean on that tree fluting melodiously.

Thou shalt hear me and fall at sight
Under my charm; my voice shall wholly move
Thy simple girl's heart to delight;
Then shalt thou know the bitterness of love.

But it must be added here that it is not merely because of the beauty of their *bhava* or the profundity of their substance that this brilliant galaxy of Vaishnava poet-minstrels earned their immortality and wielded the deep influence they did over the music of the whole of Eastern India.

The secret of their spell has to be sought even more in the potent appeal of their melodies and rhythms through which the *bhava* translated itself and thereby more or less moulded our outlook on music. In other words, it is because the tunes were compelling in their ecstatic fervour that their *padavali* songs were so enthusiastically taken up and sung by the greatest musicians and devotees of Bengal—the tunes which have been enshrined in one form or another in the teeming temples of *kirtan*-music.

Also the songs that they handed down to posterity came to be acclaimed and sung variously by various singers with the marvellous improvisations known as *ankhars*. To one who has not thrilled with every fibre of his being to the beauty of the *ankhars*, it is not possible to describe still less to explain how, in practice, the spell is wrought and the heart set aheave.

The greatest of devotees and musicians of Bengal have responded to these *ankhars*—which may be defined in brief as *word-commentary*—with all the favour of their soul's yearning for admission into the Divine dominion. I do not know if such a tradition obtains in any other class of songs in India in which the composer's theme comes to be distilled as well as elaborated through the imagination of every singer who takes it up to develop it even as virtuosos develop a melody through their improvisations in *coloratura* (to use a technical term).

Rabindranath Tagore used to describe *ankhars* as *"kathar tan"* which means composing extempore and bringing out the theme of a *bhava* in one's own way. But how this art of composing impromtu was fostered in practice can not even be attempted in a short space. So I will conclude with a brief survey of the music that followed the *kirtan* in modern times.

In Bengal a new style of music came into vogue principally through the great trio: Dwijendralal Roy, Rabindranath Tagore and Atulprasad Sen. Among these, Rabindranath stands supreme as poet, whereas as composer Dwijendralal stands highest.

It is hardly possible even to touch upon the relative merits of these three great poet-composers of Bengal. For their contributions cover an extensive field in the domain of music. They have written love songs, national songs, devotional songs and songs describing Nature in her multiple aspects. Only one point, in conclusion, I will attempt to bring out in the limited space I have at my disposal.

In India the art of musical composition as such—that is, apart from songs—had never been explored as seriously as it has been in the West. Our Sanskrit books on music have it that songs come first, then instrumental music and lastly the dance. In Europe instrumental music enjoys the highest status, then come the song and the dance.

The Bengali trio, referred to above, were deeply influenced by the West and thus inspired to take seriously to the art of composition in which they came to excel as a result of their lifelong researches in composition. So, in a sense, they can rightfully be called the pioneers in modern India in the art of composition.

And their influence was not circumscribed, for they crossed the frontiers of Bengal and came to be known as composers through the length and breadth of North India. Dwijendralal's and Rabindranath's tunes in their national songs (in the former's dramas and the latter's *Gitanjali*) came to be recognised as an achievement which broke new ground in the realm of musical composition in North India.

Atulprasad is not so well-known as yet because he is the most Bengali of the three. This must not be taken to imply that his appeal is more provincial—for his songs are rich in musical beauty and lyrical fragrance which must appeal ultimately to all. I only mean hereby that his songs are set in the context of pre-eminently Bengali images.

I fear I cannot bring out in this article the rich and lasting fillip they gave to the art of composition in North India. Suffice it to say that they imported in their songs something of the rich vitality of the Western music which has been taken up by their successors in different states, in drama, cinema, choral singing, national songs and lyrical outpourings of the heart aspiring after beauty whose name is legion.

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Three pitchers (Manasa Ghats), Barisal

Artistic Heritage of Eastern India

Devaprasad Ghosh

"PRACHYA" or Eastern India was culturally a homogeneous unit in ancient India. Bengal, Bihar, Orissa and Assam were component parts of this unit, with distinct characteristic features of artistic expression.

Throughout the course of her chequered history, the earlier part of which is just emerging out of misty antiquity, Bengal has always excelled in terracotta art. Suffering from a perpetual handicap of suitable stones for carving, except for an interlude of about five hundred years, the Bengali artist took kindly to native clay to give shape to his artistic imagination in visual forms of wonderful variety.

The use of stone for the purpose of making images or temples, came largely into vogue from about the 8th century and lasted till the Muslim conquest—roughly coinciding with the Pala and Sena periods. Territorial expansion as well as economic prosperity leading to the access to the stone quarries of Bihar and the growth of a prosperous aristocracy and middle class, were at the root of this lithic outburst of religious fervour in the early mediaeval ages. Terracotta as the art of the people, however, continued to be the feature of Bengal art from about the 3rd century B.C. right down to our own times.

Bengal developed her regional art in strict adhe-

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rence to the well marked artistic traditions and larger movements of Indian art through the centuries beginning from very remote times.

It may be remembered here that Indian art, complex in character, is mainly plastic, that is to say it is conspicuous by its plastic quality, "by a flowing connectedness of surface and depth". It is also overwhelmingly religious in context striving towards the highest spiritual ideals.

The early period of the art of Bengal is represented by a tiny terracotta figurine from Bankura. Holding a bird in her hand, this Yakshini with upturned saucy little face is almost two dimensional in aspect. Pressed between two flat surfaces, formal abstraction and linear angular treatment proclaim its affinity to the early Sunga diom of the 2nd century B.C. Charming figurines and numerous seals, all in terracotta relief, have been excavated at Bangarh in Dinajpur district, and are to be ascribed to the following century.

Recent explorations in Tamluk, ancient Tamralipta, have brought to light innumerable potteries, cult objects, dolls and toys—all in terracotta. Of exceptional merit and intriguing character, they indeed fully establish the claim of Tamralipta, besides being a great centre of art, as one of the greatest Asiatic ports of antiquity.

Its international character is also emphasised by the find of some figurines of definite Roman or Romanised affiliation of about the beginning of Christian era. Besides heads of unparalleled loveliness, unique importance attaches to a tablet found here. Comprising four figures, mainly showing an elderly lady caressing a younger one, with full figure of a Dvarapala in profile and an inquisitive head peeping from above, this unusual composition is indeed one of the landmarks of terracotta art of India.

Handled with remarkable subtlety and technical skill, this plaque, can presumably be assigned to the 2nd century B.C., bearing close analogy to the Bharhut style, in flat surface treatment, broad heavy features and peculiar turban and jewellery of the human figures, although distinguished by an emotional content lacking elsewhere.

Unfortunately very few Gupta terracottas have been found in Bengal. But the classical grace and vitality of the Gupta age (c.400-600 A.D.) was maintained almost unimpaired in the terracotta plaques of Paharpur, District Rajshahi (c. 7th cent. A.D.). Affording a glimpse into the social life of the times, the Paharpur tiles are illustrative of popular as opposed to court art and as such full of dramatic appeal and abiding interest.

In the Paharpur terracottas the impetuousness of the creative impulse is manifested in full limbed sensuously modelled figures animated with dynamic surging rhythm. Clearly outlined frames are some-

Set of dancing nayikas from Puri, Orissa

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times transgressed by the vigorous gesture reluctant to recognise limits.

With the gradual disintegration of the Gupta style which set up uniform standards throughout the length and breadth of this sub-continent, India saw the efflorescence of various national provincial schools carrying on the Gupta tradition but simultaneously evolving individual forms and formulas.

The 8th century in Bengal is notable for the foundation of the Pala empire and a School of Eastern Indian Art (comprising Bihar and Bengal as one art province) which was destined to survive for four long centuries. It was one of the most prolific producers of stone sculptures.

Taranath, a Tibetan chronicler of the 16th century, refers to the fame of this school and two of its most famous pioneer sculptors, Dhiman and Bitpalo. Using black basalt—quarried from the Rajmahal Hills—as its favourite vehicle, most of the products of the school are steles. Of the images, Vishnu, the Preserver, by far preponderates. Suryya (Sun God), the united group of Siva and his consort Parvati and other goddesses are also favourite subjects.

Buddhist icons are by no means rare in Bengal although they are not as abundant as in Bihar, the homeland of Buddhism. Uniformity of artistic conception in spite of iconographic or sectarian differences is always a potent factor never to be missed. For example there is scarcely any diversity in style between Brahmanical, Buddhist or Jain images of the same period.

Attributes, pose and accompanying subsidiary figures only determine the particular type of deity. Local regional aesthetic idioms corresponding to variations in dialect are, however, apparent to the discerning eye.

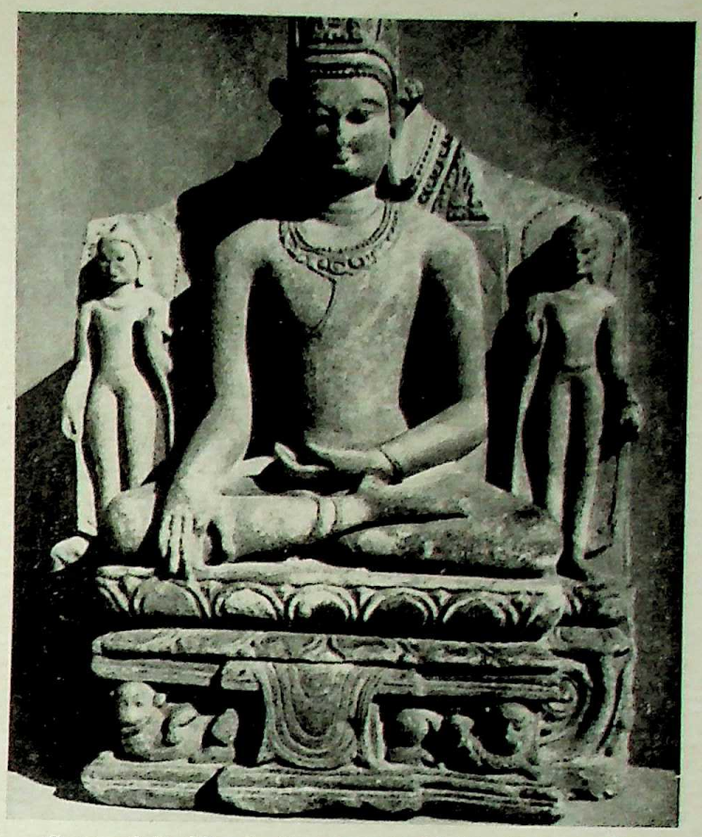
Works of the 8th and 9th centuries are characterised by heavy drowsiness of form and flabby features. Animated modelling and graceful suavity of the Gupta idiom was in the process of gradual dissolution. Bronzes and stone sculpture of the 10th century, however, betray traits at once arresting and forceful.

Modelling though tight was still voluptuous and smooth, attended by free gliding outline of great sinuosity. Fluid movement, soft curvature of the rounded limbs responding to the entwining plant-frames of great decorative value are conspicuous features of the Hooghly Lokesvara.

With the advent of the Sena dynasty in the 11th century refinement succeeded restraint. There is a striving for effect and slender charm. Modelling becomes hard, sharp and metallic in precision. Yet some outstanding pieces of great sensitiveness and accomplishment are to be found in this period.

Baroque decadence marked the 12th century. Clad in exuberant jewellery, figures in high relief project from the background entirely covered with florid ornamentation. Rigid petrified forms and exaggerated gestures characterise the multiple conventional images saturated with worldly luxuriance.

Even at the end of this decadent period on the



Crowned Buddha in Bhumisparsa Mudra Bihar c. 10th century A.D.

Lokesvara Bodhisattva, Hooghly, West Bengal c. 10th century A.D.

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A kantha from Katwa, Birbhum

very eve of the Muslim invasion, Bengal produced engraved drawings of emotional significance and vitality (Sundarban Copper-plate)—a vitality which distinguishes the scintillating miniature paintings of contemporary palm-leaf manuscript, reminiscent of Ajanta technique.

Besides Nepal whose painted palm leaves bear indelible impress of the art of Bengal, the Eastern Indian school of the Pala and Sena periods exerted considerable influence on stones and bronzes of Burma, Siam, Sumatra, Java and other outlying regions of Greater India. With the Islamic conquest of Bengal in 1918 A.D. there was a sudden cessation of all artistic activity in the province.

With the Muslim conquest of Bengal in the 12th century loss of state patronage and probable closing of the Rajmahal quarry hastened the decline of the art of stone carving on a large scale. The Bengali artist had to fall back upon alluvium clay as the principal medium, once again.

The transition from stone to terracotta technique is perhaps best exemplified by a Mahisamardini plaque of about 16th century, betraying precisely carved, tightly modelled figures in bold relief, from Arambagh, District Hooghly.

The great emotional and religious fervour aroused by Chaitanya and his Vaisnavism brought about the aesthetic renaissance of mediaeval Bengal. It was a mighty popular upheaval. The country became studded with numerous brick temples, their walls carpetted with glittering terracotta plaques representing scenes from the Ramayana and the Mahabharata, the two great epics. Krishna replaced Vishnu as the popular god.

One of the loveliest creations of this period reminiscent of ancient craftsmanship but undoubtedly mediaeval in the accentuation of curves and angularities is the wooden figure of Krishna (Malda), playing the flute. Emphatic lines and vigorous movement definitely distinguish the terracotta, bronze and wooden works of late mediaeval Bengal.

The Bengal artist handled his native clay with unequalled ease and skill. The gripping actions of the scenes, almost invariably depicted in high relief, display variegated grouping and freedom of movement with rich inter-play of light and shade. The irresistible urge of sweeping movement is invariably there; yet the design is coherent producing massive but balanced combination.

The scroll paintings and specially the wooden manuscript covers and manuscript pages betray the mediaeval Rajput style of Central and Northern India but envisaged in peculiar local Bengali version. Mughal floral decoration and composition are sometimes apparent.

There are numerous references in Ancient Indian literature of the common use of scroll painting. Bright glowing colour scheme and bold effective representation—principal idioms of the popular language of the rural artist—contribute not a little to the direct appeal of the narrative style of painting of the Pats.

"Cinemalike in their dramatic appeal and simple action" and illustrating the favourite ballads of Bengal, they are executed with a freedom and intensity of passion fully mirroring the folk mind. Compartmental divisions into successive panels depicting each episode of the story are also redolent of Ancient Indian usage dating back to pre-Christian era.

It may be pointed out here that the coloured scrolls and specially the single Kalighat panels whose sweeping dynamic lines create vital patterns with unfaltering draftsmanship and imagination have served as the inspirational source of Jamini Roy's art. The Hindus and Muslims have alike contributed to the common vocabulary of folk art.

Modern terracotta art in Bengal of the last hundred years or so, necessarily is ecclesiastic in character. There is the folk element, classical and mediaeval survivals. The vision of modern Bengali art is to be conjured up in forms of multiple painted Pats and Patas, moulded clay dolls and potteries, woven Kanthas and Saras—all produced by the unsophisticated village men and women.

Hand modelled earthen dolls carry in their pure abstract forms the impress of the creative attitude of the craftsmen who shaped the clay mother goddess of the Indus Valley Culture in the 2nd or 3rd millenium B.C. Is it not a startling evidence of the almost un-

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believable continuity of Indian tradition? Is it not, at the same time, very "Modern"?

It is to be noted, however, that the Muslim output during the six centuries of occupation and settlement in Bengal was indeed meagre except for the notable mosques at Gaur and Pandua. Some of the mosques in North Bengal show decorations in stone recalling ancient motifs and ornaments.

The enamelled bricks of Gaur-Pandua were dexterous colourful patterns of great attractive values under the burning sun of a tropical sky. The poor quality of the provincial school of painting at Murshidabad, showing a decadent phase of late Mughal miniatures is certainly offset by the ivory carving of Murshidabad. Some of the early works of the 18th century are skilful productions of singular charm and beauty.

Bihar

Land of Bihar, holy alike to the Buddhists and Jains, saw the dawn of the historical period of India. First historical kings of Indian antiquity—Bimbisara and Ajatasatru, Saisunagas and Nandas—emerge in Bihar. At the same time earliest cyclopean stone masonry walls, undoubtedly pre-historic, also occur in old Rajagriha.

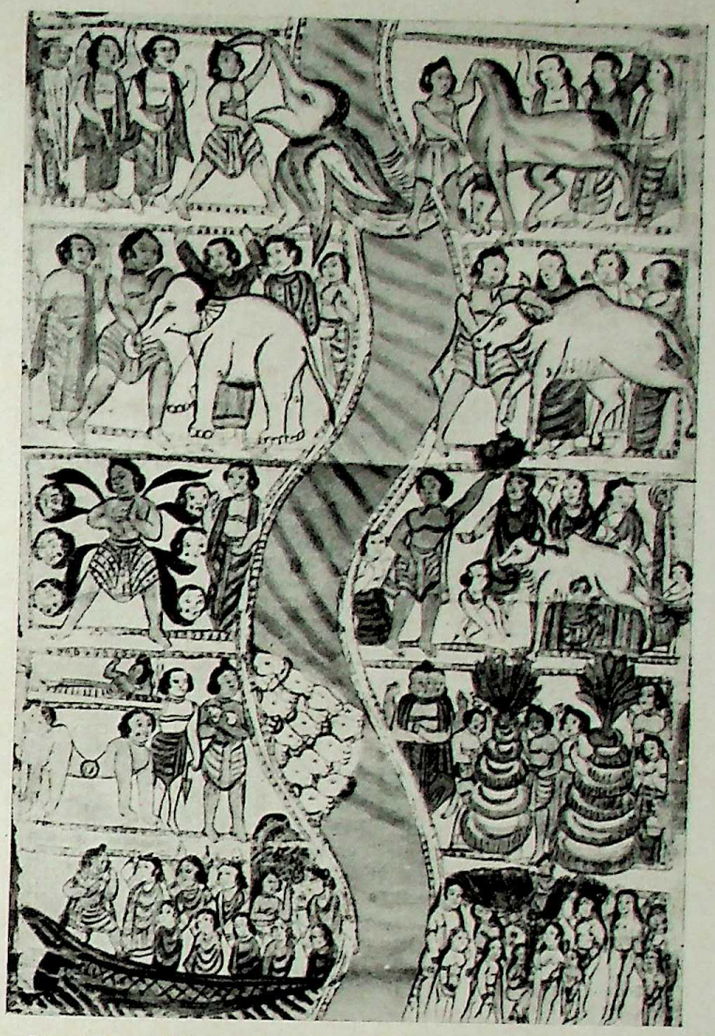
A mound or stupa supposedly of Vedic origin at Lauriya Nandangarh in north Bihar has yielded through excavation, a small gold leaf, impressed with the figure of the Earth-Goddess (c. 7th or 8th century B.C.) and some other parapharnalia associated with Vedic ritual.

Pataliputra (Patna) the seat of Mauryya imperial power, contains remains of Asoka's palace which was described by Megasthenes as no less magnificent than the palaces of Susa and Ecbatana. In the 5th century A.D. Fa-Hien still saw it standing, but Hiuen Tsang found it burnt down.

"Recent excavations have revealed the remains of a great hall with stone pillars, which seems to have been planned on the model related to that of the pillared halls of the Achaemenid Kings of Persepolis." Architectural survivals of Asoka's reign in polished sandstone, include the peculiar Sudama cave, consisting of a circular and an anti-chamber, and the Lomash Rishi cave, with its delicately ornamented facade, both in the Barabar Hills and both strangely enough dedicated to the use, not of Buddhists, but of the Ajivikas.

Not a few of the Asokan *stambhas* or pillars have been found in Bihar. Of these the finest indeed is the 40 ft. column, crowned by a magnificent lion still standing at Lauriya Nandangarh. The bull capital from Rampurwa, now in the National Museum, is an outstanding example of Mauryya plastic art.

Monolithic sculptures in the round—"Chitra murti" of the Silpasastras—are very rare in ancient India. Bihar has furnished three of them. Dated between the Mauryya and Kushan period the two Patna Yakṣa statues and the Didarganj Yaksini are colossal images of profound artistic significance. The last one is the finest example of this group. Decked in elaborate jewellery, but nude to the waist, she is a superb specimen of ideal Indian feminine beauty, emphasised by a finely modelled head and torso, very full and heavy breasts and comparatively slender waist, carrying a fly-whisk in one of her hands.



Panel from Krishna Lila Pat, Midnapur, 19th century A.D.

The great Buddhist temple of Mahabodhi at Bodh-Gaya, the focal point of Buddhist world, equally venerated by the Hindus, appears to have been in existence since the time of Asoka, its shape undergoing various changes throughout the centuries. Pyramidal in appearance—unique in Indian architecture—the present structure was constructed in the Gupta period which the Burmese subsequently restored in the 12th and 13th centuries.

Another important monument of the Gupta age is the circular building at Rajagriha, known as Maniyar Math (c. 5th century A.D.) with stucco images of Hindu deities and Naga and Nagini figures of utmost refinement, sensibility and placid charm.

It was Narasimha Baladitya (467-473 A.D.) who founded the world famous Buddhist University at Nalanda. Hiuen Tsang graphically describes the great brick temple, over three hundred feet in height, erected by the king (now completely gone, excepting the pavement), as resembling the tower at Bodh-Gaya

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and says that it was exquisitely decorated and magnificently furnished.

Continuing his description on the wondrous University buildings, he says "one gate opens into the great college, from which are separated eight halls, standing in the middle of the monastery. The richly adorned towers, and the fairy like turrets, like pointed hill-tops, are congregated together. The observatories seem to be lost in the mists of the morning and the upper rooms tower above the clouds.....All the outside courts in which are the priests' chambers, are of four stages. The stages have dragon projections and coloured eaves, the pearl-red pillars, carved and ornamented, the richly adorned balustrades, and the roofs covered with tiles that reflect the light in a thousand shades, these things add to the beauty of the scene."

About the supreme importance of Nalanda in Indian and Indonesian art history, Coomaraswamy opines, ".....The development of the Pala school of architecture and sculpture, the 'Eastern School' of Taranatha, is typically illustrated at Nalanda, of which the importance as a centre of Buddhist learning continued undiminished by the political decadence of Magadha, until the destruction of the monasteries by the Muhammedans about 1197. Nalanda has been the richest source of the well-known smooth black slate images of the Pala school, and has also yielded a very extensive series of Buddhist Bronzes. It may well have been here that the famous artists Dhiman and Bitpalo, painters and sculptors unmentioned by Taranatha, worked in the latter part of the 9th century. The importance of Nalanda as a centre of Buddhistic influences throughout the Buddhist east is well illustrated by the close relations existing between it and Sumatra-Java in the 9th century, as revealed by the copper-plate of Devapaladeva, in which reference is made to the important monastery built by Balaputra, of Suvarnadvipa, ca. 860. Traces have been found of what may have been a statue of the connections with Nalanda".

Orissa

The love of form and of drawing was perhaps a greater force with the Orissan craftsmen from the earliest times than with any other people. The six long centuries from the eighth to the thirteenth saw the beginning of the glorious striving of the artist to express his inner aesthetic realisation and decorative instinct in plastic forms, the intense effort to produce something effective and distinctly original, the eventual breaking away from the Gupta leading strings with the gradual efflorescence of his native genius and the ultimate culmination in an extremely virile national art, in perfect harmony with the traditional craft designs of India.

The temple of Satrughneswara, the earliest of the Bhuvaneswara group and belonging probably to the 7th century A.D. records the initial and crude attempts at the art of decoration by an unsteady and imperfect hand on undeveloped architectural spire. Parasurameswara (8th century A.D.) shows further progress in the craftsman's skill and workmanship.

The beautiful and charming floral designs of contemporary Vaital Deul, betraying South Indian architectural conception boldly conceived and effectively designed, betray the gradual awakening of aesthetic consciousness and a true appreciation of the beauty of form.

The decorative vocabulary of the early group of temples is extremely rich and varied in the wealth of geometrical and floral ornaments but as yet undeveloped genius of the artist failed to harmonise the innumberable elements into tune with architecture as a whole. The older structures also unmistakably betray that, as regards motifs and arrangement, they were still under the influence of early Indian convention and inspired by Sunga and Gupta traditions.

Mukteswara at the begining of the 10th century A.D. stands at the parting of ways. It marks an epoch in Orissan art, as it demonstrates, for the first time, the assertion of the native genius in all its glory and magnificence. Fergusson has called it the gem of Orissan architecture. By themselves the ornaments were richly carved and elegantly designed yet they had to be united and co-ordinated in the decorative scheme. This was accomplished within fifty years or so in the great Lingara.

Perhaps, in the beginning of the 10th century Orissa was occupied by the Somavamsis of Mahakosala who came from the West. The traditional Yayati Kesari, who performed the Asvamedha sacrifice in the Virajakshetra or Jaipur, according to the Mandala-Panji or the palm-leaf records of the temple of Jagannath at Puri, may be recognised as one sovereign of this dynasty, who bears the surname Yayati.

The majestic tower of the Lingaraja temple at Bhuvaneswar (c. 1000 A.D.) was directly constructed under the auspices of the Somavamsis. Its chaste decorations and noble proportions, have at once singled it out as the typical specimen of Indo-Aryan or Nagara style of architecture.

But the spires of Orissan temples are characterised by some peculiar individuality which distinguishes them from the rest of north Indian mediaeval temples. This distinctive character of the Orissa school of architecture, is confirmed by the reference in a South Indian inscription to a new class of architecture, viz., Kalinga, besides the three well-known classes of Nagara, Vesara and Dravida.

Happily, the area over which examples of this particular type of architecture are strictly confined, almost exactly coincides with the region of ancient Kalinga in its widest extent, viz., Amarkantak (C.P.) in the west, Vizagaptam (Madras) in the south and Manbhum or Bankura (Bengal) in the north. The temple of Jagannatha (11th century A.D.) at Puri is the highest and most complete monument of the class to survive.

The monuments of the middle and the late mediaeval period are characterised by the predominance of the beautiful and peculiar Orissan scrolls,

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Nayikas and Mithunas, over all the other forms of decoration. Every discriminating critic will admit that the wonderful skill and decorative feeling displayed in the execution of the various foliage designs such as *phula-lata, patra-lata, nati-lata, vana-lata, etc.*, unmistakably show that in this department of fine arts, the Orissan sculptor easily excelled his Greek compatriot.

The appalling beauty and decorative grandeur of the Rajarani temple are pre-eminently due to the luxuriant grace of these carvings. The minutely carved walls, with delicate and intricate details, afforded a pleasing background to the exquisite statuary in high relief and clearly outlined the flowing curves of the summarily modelled luscious nymphs in alluring poses.

The Surya Deul at Konarak in the 13th century, however, represents the climax of the Orissa craftsman's search for the beatific vision in the realm of aesthetics and sums up all that is best and the most charming. In the bewildering wealth of ornaments, with their exquisite finish and impressive effect accompanied by a perfect proportion and the massiveness of its structure, the temple excels all other temples in Orissa, nay, in the whole world.

It is the most sublime and splendid luminary in the firmament of Orissan architecture, but sadly the last flicker of the architect's lamp, never to be lighted again to dispel the eternal gloom which soon enveloped the hapless land. It is strange indeed, that within two centuries, when the empire of Orissa stretched from Midnapur in the north to Trichinopoly in the south, and when the powerful Gajapatis defied and often humiliated the mighty Sultans of Gaur, Malwa and the Bahamani kingdom and the valiant rulers of Kanchi and Vijaynagar, even then, when Orissa reached the apex of her glory, the lost supremacy in the field of art was never redeemed.

The artistic skill of the Oriyas is still a living force. This is revealed in the manifold works of supreme beauty, in stone and in paint, still being produced by the descendants of the architects and artists who built Konarak and Bhuvanesvar—some of the finest flowers of ancient heritage.

Unlike many of the other Indian states, the traditional art of Eastern India, of profound significance, is still an important factor in its rural life. But it is fast decaying. Unless there is a conscious effort to stem the engulfing tide, it is in imminent danger of being overwhelmed by superior socio-economic forces of modern Machine Age. Is it going to be completely effaced by imported motifs and conventions, fashions and fancies, having no kinship with the rich artistic experience of the past two thousand years and more? That is the most important question awaiting answer from a rapidly transforming society, based on abiding cultural and spiritual values, which always successfully adapted itelf in the past to the varying vicissitudes of history.

Jagannath Puri

Harekrushna Mahtab

I DO not know if there is any centre of Hindu religion, which claims equal allegiance of all sections of the Hindu society and even of those, which have branched out of the main Hindu religion, such as Buddhism, Sikhism, etc., as Jagannath Puri in Orissa.

It is not only the visit of millions of pilgrims belonging to various sects of the Hindu religion throughout the year to Puri, which has made it a great centre of pilgrimage; it is the establishment for propagation of the philosophies and practices of different sects and charitable endowments made for the purpose, which have worked together in such a way that in the course of the last 1,000 years Jagannath of Puri has grown to be a common deity of worship in the large domain of Hindu religion.

There is not a single sect of the Hindu religion, which has not got a Math (religious establishment) in Puri owning endowed properties in varying degrees. All sects and their prominent followers beginning from Sri Sankaracharya down to Sri Guru Nanak and Kabir Das not only visited Puri but they established their separate institutions, which are still existing according to their respective popularity.

There are about 107 Maths in Puri and they have some allotted service in the temple of Jagannath according to the age-long customs—a fact, which goes to indicate how Jagannath has enabled to absorb some-

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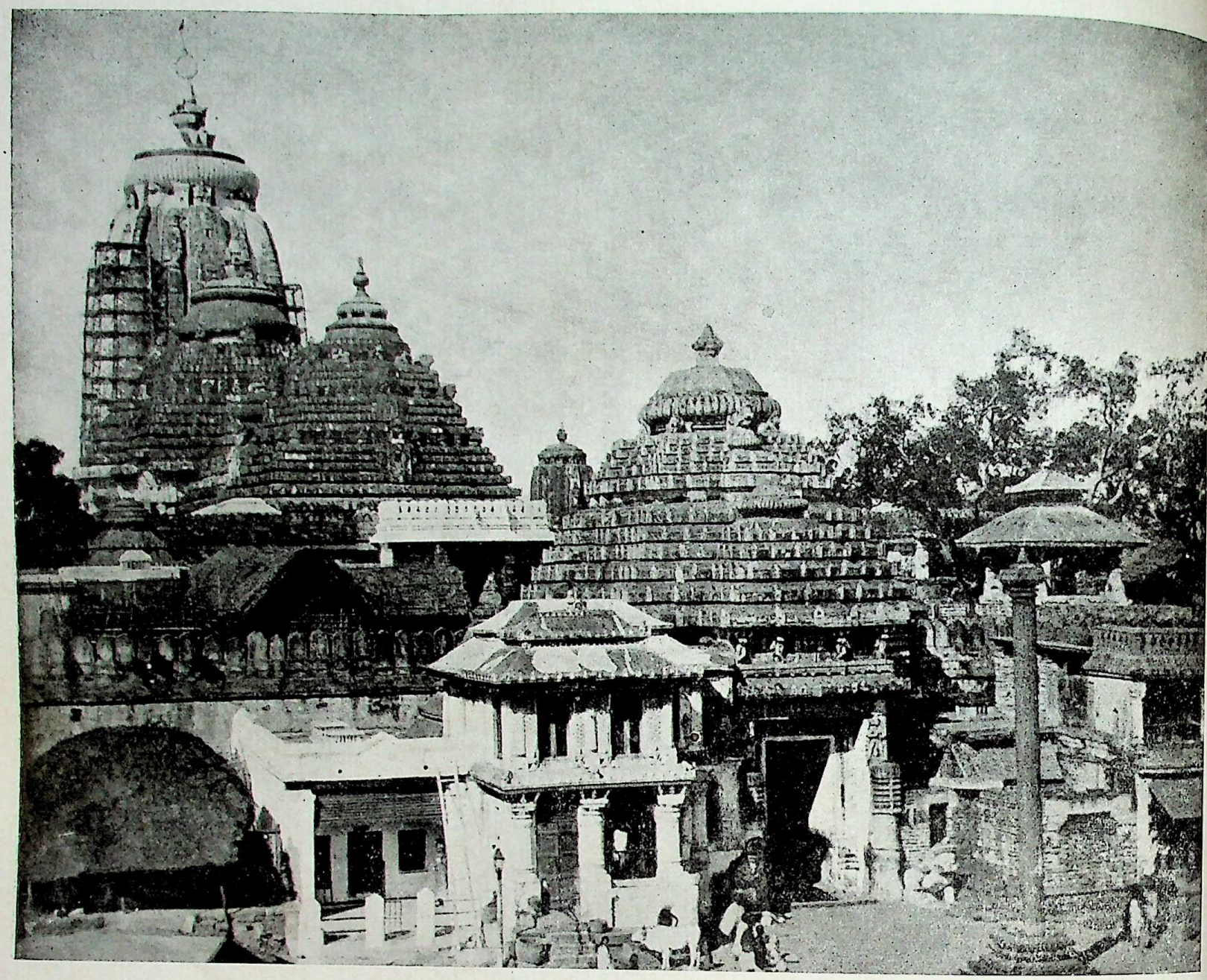

The Jagannath Temple, Puri

thing of the philosophies and practices of various sects, which have in different ages grown inside the Hindu religion.

Till the British came and established their strong rule of law in India protecting the vested interests of all kinds, the temple of Puri was open to all sects and even all religions. From the Persian records it is found that at one time even the Musalmans used to go inside the temple and pray there.

At one time the tribes also claimed the temple as their own. As a matter of fact, in 1875 a large number of Konds wanted to present their offerings to Jagannath in the temple, but they were prevented by the then Raja of Puri, who succeeded in monopolising the temple with the help of the British police. Since that date the temple ceased to be the common platform of all sections of the Society. But even then, it went on being claimed as belonging to all sects, who recognise the deity of Jagannath as their own in their way.

The situation, however, was corrected in 1947 when the temple was thrown open to all classes including the tribal people. It is a curious fact that a large section of the tribal people owe more allegiance to Jagannath than even the caste Hindus.

The significant feature in the temple of Jagannath is the absence of any trace of caste system. The highest and the lowest take their food together not only inside the precincts of the temple, but also outside anywhere, only if the food had been offered to Jagannath previously. Even if a particle of foodgrain offered to Jagannath is mixed with large quantities of food, then also the entire stock is taken together without any distinction of caste or creed.

Even today a tribal sect is in charge of the worship of Jagannath for about a month during the period of Car Festival. During this period the Daitas, who are admittedly the descendants of the old Savara tribe worship Jagannath according to their own customs.

If one scrutinises the various Mantrams and various practices of worship, which are in vogue in the temple of Jagannath, one will be amazed to see how at various stages different sects have exercised their influence over the modes of worship and how Jagannath has absorbed everything and thus grown to be the common

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deity of all. Nowhere in India there is such a cosmopolitan centre of worship as it is in Puri.

All these are historical facts; but if one takes into account the legends, which are large in number regarding Jagannath, one will notice how in course of time, various races and civilizations have run into one another and how the present society has evolved. I think it is only in Orissa, thanks to the temple of Jagannath, one notices the visible link between the pre-Aryan and Aryan cultures and civilizations.

Those who claim that only the Aryan civilization is prevailing today are proved to be highly mistaken by the history of the temple of Jagannath. A large number of words used in connection with the worship of Jagannath are Dravidian and quite a few of them are also pre-Dravidian.

While Northern India is predominantly Aryan and Southern India predominantly Dravidian, Orissa in Eastern India happens to be a place where the mutual give-and-take of all civilizations has taken place. Orissa, therefore, presents a solution to many racial and cultural problems in India.

How old is Jagannath? How old is the temple of Jagannath? These are very interesting questions, which the historians have been trying hard to answer. The present temple of Jagannath was built by Choda Ganga Dev in the middle of the 12th century according to the inscriptions, but previous to this year there are other inscriptions mentioning the Purushottam Kshetra or Puri to which the visitors from far-off places in Madhya Pradesh used to come.

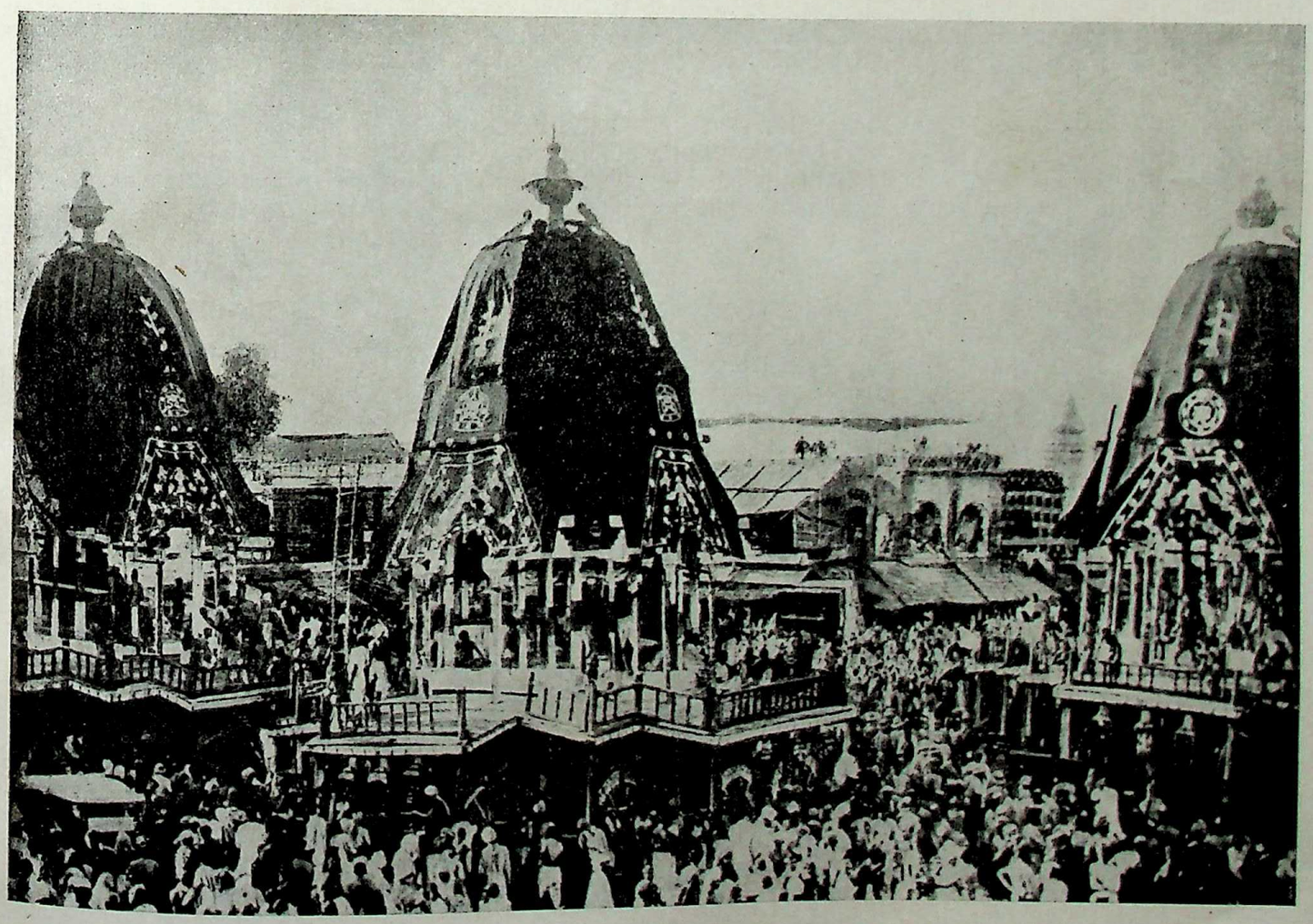
In the records relating to Sri Sankaracharya it is known that he visited Puri in the 9th century. We do not find any other historical record to show when Puri, which is the abbreviation of Purushottam Kshetra, gained its reputation as a religious centre. Of course, there are many legends about Puri and Jagannath.

King Indrajit figures most prominently in these legends, but no trace of this king is yet found in any trustworthy historical record. But the clue to the history of Jagannath is given by the images and various practices of worship and festivals.

The three images Jagannath, Subhadra, and Balabhadra are so ugly to look at, that the first sight of them would be revolting to unbelievers. There is not only no trace of art, but also no trace of any meaning in the images as they would appear at the first sight.

The well-known historian Cunningham has, however, given a clue to the meaning of the images. He has suggested that the images in Puri are the three

Car festival, Puri



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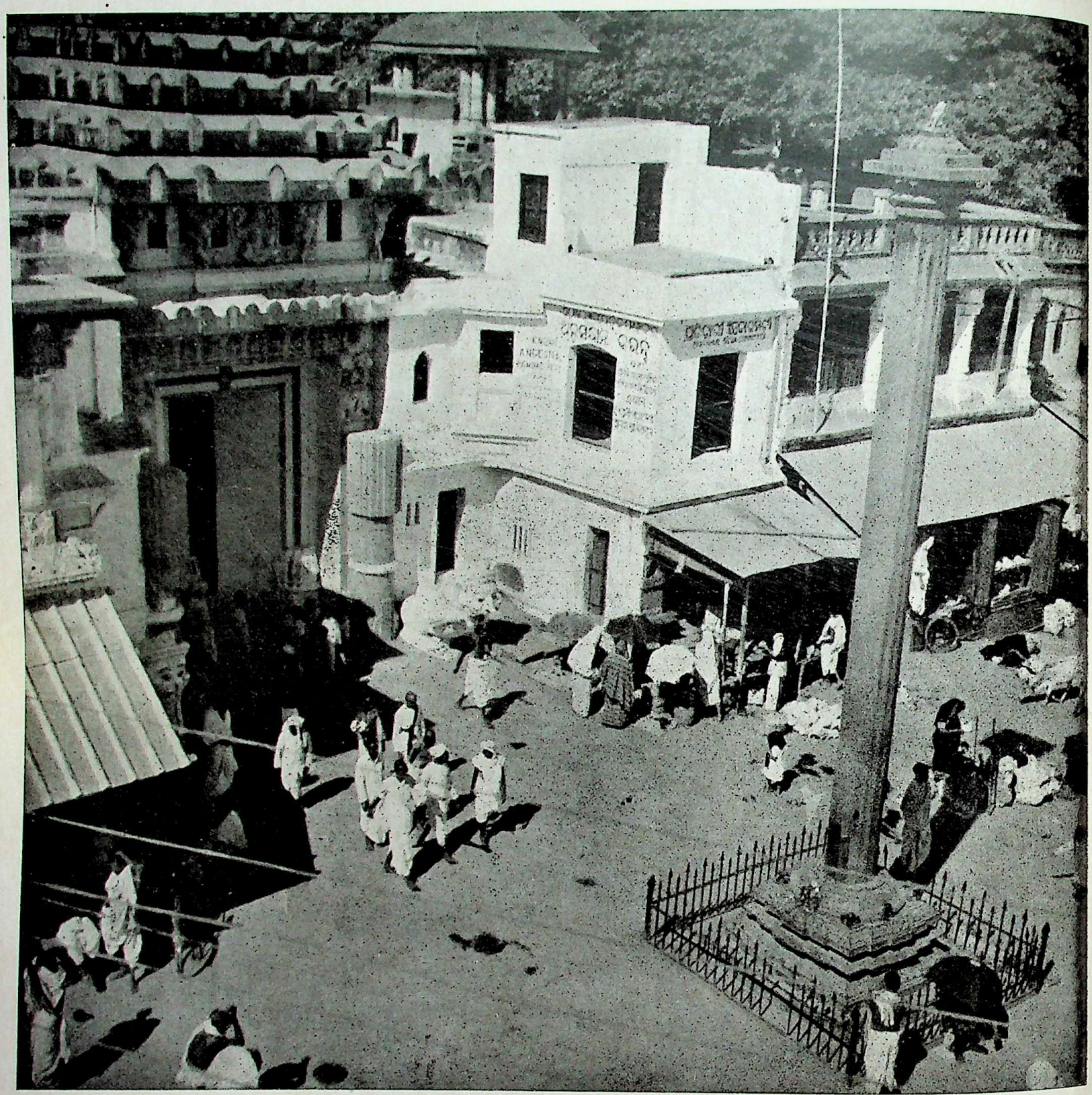

The main entrance to the Jagannath Temple

symbols, which are found in almost all the ancient Buddhist Stupas and they are the symbols of what is known as three-Ratna, Buddha, Dharma and Sangha.

Cunningham further suggests that the lines of the images in Puri are really the monogram of five Pali letters, Ya, Ra, Va, La, Sa. These five letters have great significance in the Buddhist scriptures as is found in many ancient manuscripts. The symbols as are seen in the images in Puri are found also in Vilsa topes and Barhut.

Various festivals connected with Jagannath, such as the great Car Festival, the Snana Purnima, etc., are all Buddhist ones. Even today in the Buddhist countries, these festivals are observed almost exactly in the same manner as in Puri.

Taking into account all these factors one can easily conclude that the worship of Jagannath must have begun at the latest in the first-half of the 1st century B.C., some time after the campaign of Ashoka, particularly in Kalinga (Orissa).

But there are some traces to suggest that even before Asoka's time there were some images, which used to be worshipped by the pre-Aryan people and these images were subsequently taken over and given new shapes by the Buddhist missions. But this requires further study and investigation. So far, we are on

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safe ground to say that the age of Jagannath is at least two thousand years and the reputation of Puri or the Purushottam Kshetra is about 1,200 years old.

It is not that Jagannath has never been subjected to the fury of the man when religious fanaticism was rampant in the medieval period. It is not only Kalapahad, the notorious iconoclast of the middle ages and a few others of his class, who made serious efforts, but in vain, to destroy the images and the temple; but it was the fate of Jagannath once to be looted by a Hindu governor during the Mughal rule.

The fabulous wealth, which Jagannath has all along possessed attracted the attention of the said Hindu governor more than once, but in spite of the loots, which took place, the treasure of Jagannath has all along been recouped by the devotees in time.

It is the hugeness of the temple and the faith of millions of people in Jagannath, which has saved it from the hands of the iconolcast and the greedy looters at a very difficult time in its history.

It is a singular feature in the history of Jagannath that many non-Hindus have been attracted towards it and they have been taken in by the society as great saints. The stories of Yavana Haridas and the saint Salbeg are still fresh in the mind of the common man. This is the reason why there is no such religious acrimony in Orissa as in many other parts of the country.

The message of Jagannath was carried to Assam by Sri Sankar Dev. Literature on Jagannath is as abundant in the Assamese language as in Oriya. The cultural affinity between the Assamese and the Oriyas is great because of the common cult of Jagannath.

Sri Chaitanya of Nabadwip, Bengal, the great saint of the 16th century, who moved the heart of millions of people in Eastern India, came and stayed till the end of his life for about 16 years in Puri. He introduced a simple mass religious practice of uttering the name of Sri Krishna, which was accepted with great enthusiasm throughout Orissa and Bengal.

That was the basis of the affinity of Orissa with Bengal for all these years. Without exaggeration it may be stated that the cultural affinity, which is so evident in Bengal, Orissa and Assam has as its centre Jagannath Puri.

The tolerance and the adaptability which Jagannath has exhibited in the course of the last thousands of years should be the clue to the solution of the cultural problem of Modern India. Quite unwittingly large sections of people are given reasonable ground to be offended when they are told that the culture of India is Aryan.

It is true that the Aryan culture has played a great role in the formation of the Indian culture; but it is also true that the pre-Aryan cultures have played equally great roles to build up the Indian culture. The Indian culture is the blending of at least four cultures according to Dr. Suniti Kumar Chatterjee. That blending is based upon extreme tolerance and utmost adaptability.

The necessity of laying stress on Indian culture, as distinguished from Aryan or Dravidian culture, is very great when India is free today. Freedom of India has not only brought about freedom from a foreign rule, but also it has brought the entire country under one administration, which is a unique event in the history of India.

More than 2,000 years ago Ashoka tried to bring the whole of India under one administration. He succeeded to a great extent, but he could not complete the work. A few years after his death India again broke into several kingdoms. Many centuries later, the Mughals tried to accomplish unification of India, but they, too, failed.

It was left to the British to bring the whole of India under the Crown of England, but it so happened that different types of administration grew in different parts of the country. While British India was administered in one way, the Princely India was administered in a very different way. The difference was so great that it appeared, as if, the two parts of the country were actually two separate kingdoms.

It is only after India won freedom that the whole country has been brought under one type of democratic administration. This is the time when all reminiscences of the old traditions of different cultures of India, each one of which, no doubt, has played a great part in its own way, but at the same time has created conflicts in the national outlook, should be wiped out in a determined manner.

New literature has therefore, to be written on a different basis. Education must be tuned to that direction. Every state policy, every action has to be conducted in that manner. Each citizen should feel one with the other under the inspiration of the great common Indian culture, which is neither Aryan nor Dravidian, but which is the consummation of both.

This is the message of Jagannath to India today.

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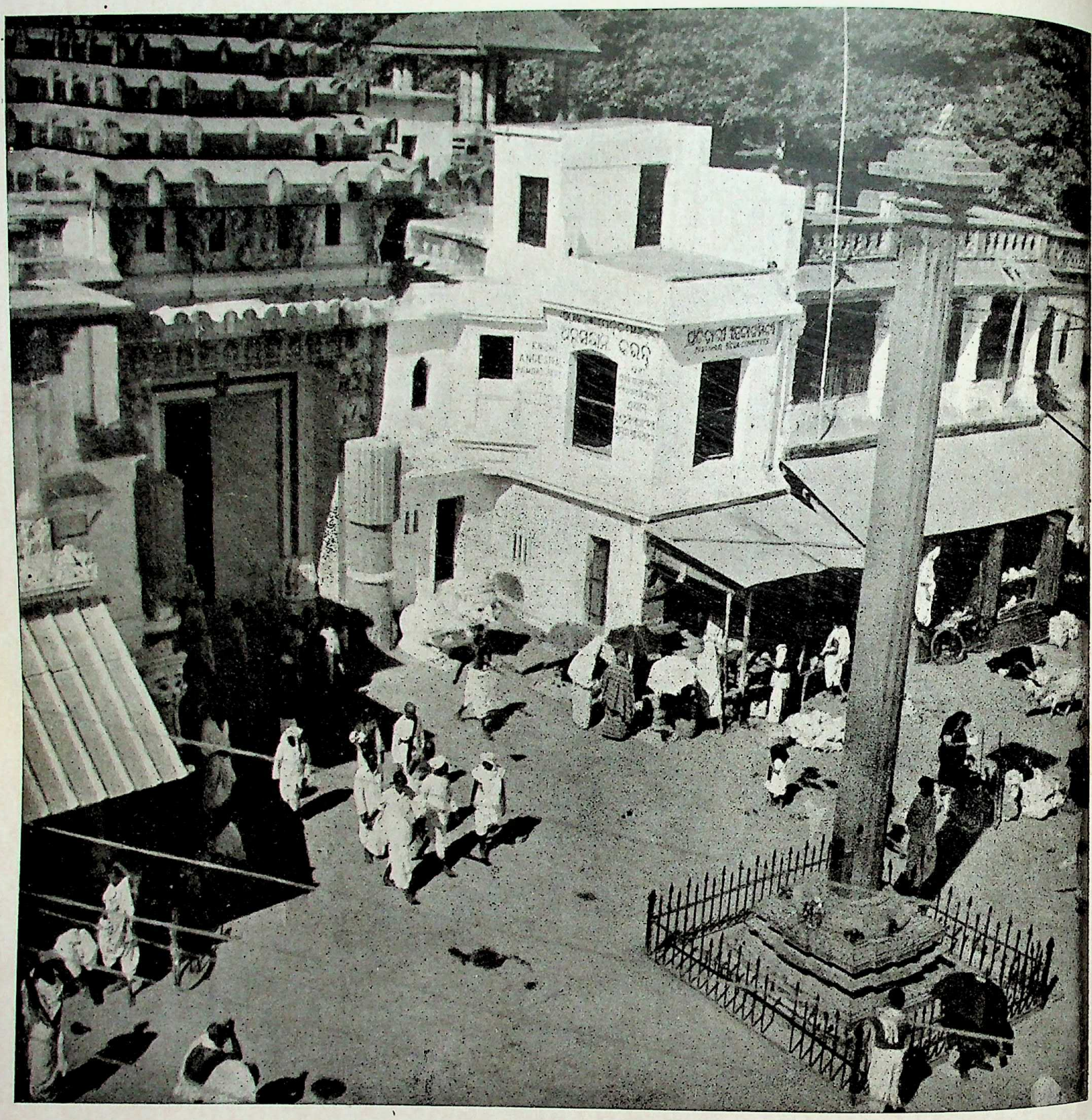

The main entrance to the Jagannath Temple

symbols, which are found in almost all the ancient Buddhist Stupas and they are the symbols of what is known as three-Ratna, Buddha, Dharma and Sangha.

Cunningham further suggests that the lines of the images in Puri are really the monogram of five Pali letters, Ya, Ra, Va, La, Sa. These five letters have great significance in the Buddhist scriptures as is found in many ancient manuscripts. The symbols as are seen in the images in Puri are found also in Vilsa topes and Barhut.

Various festivals connected with Jagannath, such as the great Car Festival, the Snana Purnima, etc., are all Buddhist ones. Even today in the Buddhist countries, these festivals are observed almost exactly in the same manner as in Puri.

Taking into account all these factors one can easily conclude that the worship of Jagannath must have begun at the latest in the first-half of the 1st century B.C., some time after the campaign of Ashoka, particularly in Kalinga (Orissa).

But there are some traces to suggest that even before Asoka's time there were some images, which used to be worshipped by the pre-Aryan people and these images were subsequently taken over and given new shapes by the Buddhist missions. But this requires further study and investigation. So far, we are on

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safe ground to say that the age of Jagannath is at least two thousand years and the reputation of Puri or the Purushottam Kshetra is about 1,200 years old.

It is not that Jagannath has never been subjected to the fury of the man when religious fanaticism was rampant in the medieval period. It is not only Kalapahad, the notorious iconoclast of the middle ages and a few others of his class, who made serious efforts, but in vain, to destroy the images and the temple; but it was the fate of Jagannath once to be looted by a Hindu governor during the Mughal rule.

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Young tea plants in the nursery before transplantation

Tea: The Golden Liquor of India

S. M. Mookerjea

INDIAN tea brings not only cupfuls of cheer to countless people all over the world but also considerable revenue to the exchequer of the country of its origin. As a commercial crop and export industry, tea comes second only to jute and earns for India every year over Rs. 1,000 million in terms of foreign exchange and a revenue of about Rs. 130 million from customs and excise duty on tea.

India is now by far the largest producer as well as supplier of tea in the world. She exported in 1953-54 over 340 million pounds of tea to the U.K., 30 million pounds to the U.S.A.; 21 million pounds to Eire; 20 million pounds to Canada; 10 million pounds to Egypt; 5 million pounds to Turkey and 3.5 million pounds to Australia, in addition to smaller quantites to several other countries.

Although tea plants grew in wild profusion on the hillsides of North-East India and some tribesmen of Assam were known to prepare a concoction from tea leaves of rank growth, no thought was given to cultivating the indigenous bushes until a trade expedition was sponsored by the East India Company to report on the suitability of Indian soil for "certain new crops".

It was perhaps the widely-held belief that good tea could only be produced in China—which was the main source of world's tea supplies over the seventeenth and eighteenth centuries—that led to the neglect of the wild tea indigenous to Assam.

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But when the trading conditions in China were made well nigh impossible for foreigners, the East India Company, which had by then built up a sizable demand for tea in Europe, felt gravely perturbed and Lord William Bentinck, the then Governor-General of India, appointed in 1833 a Commission to inquire into the commercial potentialities of tea production in India.

Originating from an experimental plantation set up in 1836 at Lakhimpur in Assam, which took two years to ship the first 350 lb. of Indian tea to London, tea cultivation in this country attracted free flow of capital from private enterprise and, by 1878, spread over an area of 200,000 acres with an approximate yearly yield of nearly 40 million pounds of tea.

The next fifty years saw the Indian tea-plantation grow into a vast industry, grow ten-fold, annually producing 400 million pounds of tea, exporting some 350 million pounds and covering 776,000 acres. In the meanwhile, Indian tea had also gained a unique reputation for its exquisite qualities and fine aroma, and was highly prized in the world markets.

India produces today more than 600 million pounds of tea per annum and exports nearly 70 per cent of the total crop. Her tea industry provides direct employment to over 1.2 million workers—thus employing more men than any other single industry in the country.

The aggregate area under tea cultivation is nearly 787,000 acres made up of 6,240 gardens. Besides the North-Eastern States of Assam and West Bengal, which contain 74 per cent of the total acreage, there are major tea-producing tracts in South India (Travancore-Cochin, the Nilgiris, Mysore, Coorg, Madura, Tinnevely and Coimbatore); and minor ones in Himachal Pradesh (Mandi); the Punjab (Kangra Valley); Bihar (Hazaribagh and Ranchi); Uttar Pradesh (Dehra Dun, Almora and Garhwal).

With the removal of the misconception that tea grows only on slopes of hills and in response to growing demand for Indian tea from the United Kingdom and other tea-importing countries, cultivation of tea was gradually extended to areas besides North-East India as stated earlier.

It has been found that tea can be grown in widely separated countries and under diverse soil and climatic conditions but, for vigorous growth and cultivation on a commercial scale, it requires, in short, a steady, warm and humid climate and deep and porous soil which can suitably be drained.

After a site has carefully been selected for tea cultivation, all brushwood and stumps of fallen trees are removed; only a few plants of the leguminous variety are allowed to remain in order to give shade and enrich the soil. A separate plot of land is maintained in each garden for the purpose of germinating seeds and, after some time, the seedlings are transplanted to the main garden.

After about two years, the young plants are pruned to induce them to spread out into leafy bushes. The planter has now to wait till the bushes are in bearing when, with the first rains in April, the plants begin to

An expert at tea picking

throw out new shoots known as "flushing". With "flushing" begins the season for plucking tea, which generally lasts till November, though in some parts, e.g., in South India, tea is plucked practically throughout the year.

The good tea of commerce is obtained by plucking only the young tender buds and leaves of the plant and this work is done by women who are naturally quick of eye and deft of finger.

To obtain the tea that we drink, the leaf has to undergo a number of processes at the factory. The first stage of manufacture is konwn as withering, which occupies a period from 10 to 30 hours. Withering is more or less a natural process, although great care has to be taken to see that it is slow and even, because on this process largely depends the final quality of tea.

When the green leaves have been withered sufficiently, they go through a second process which is called rolling. Rolling is done by a machine which twists the leaf and breaks open the cells containing the stimulating juices of the tea. Withered and rolled, the leaves are taken to the sifters where the coarser leaves are separated from the finer, after which the leaves are spread out in a cool humid place so as to absorb oxygen from the air—a process known as fermentation.

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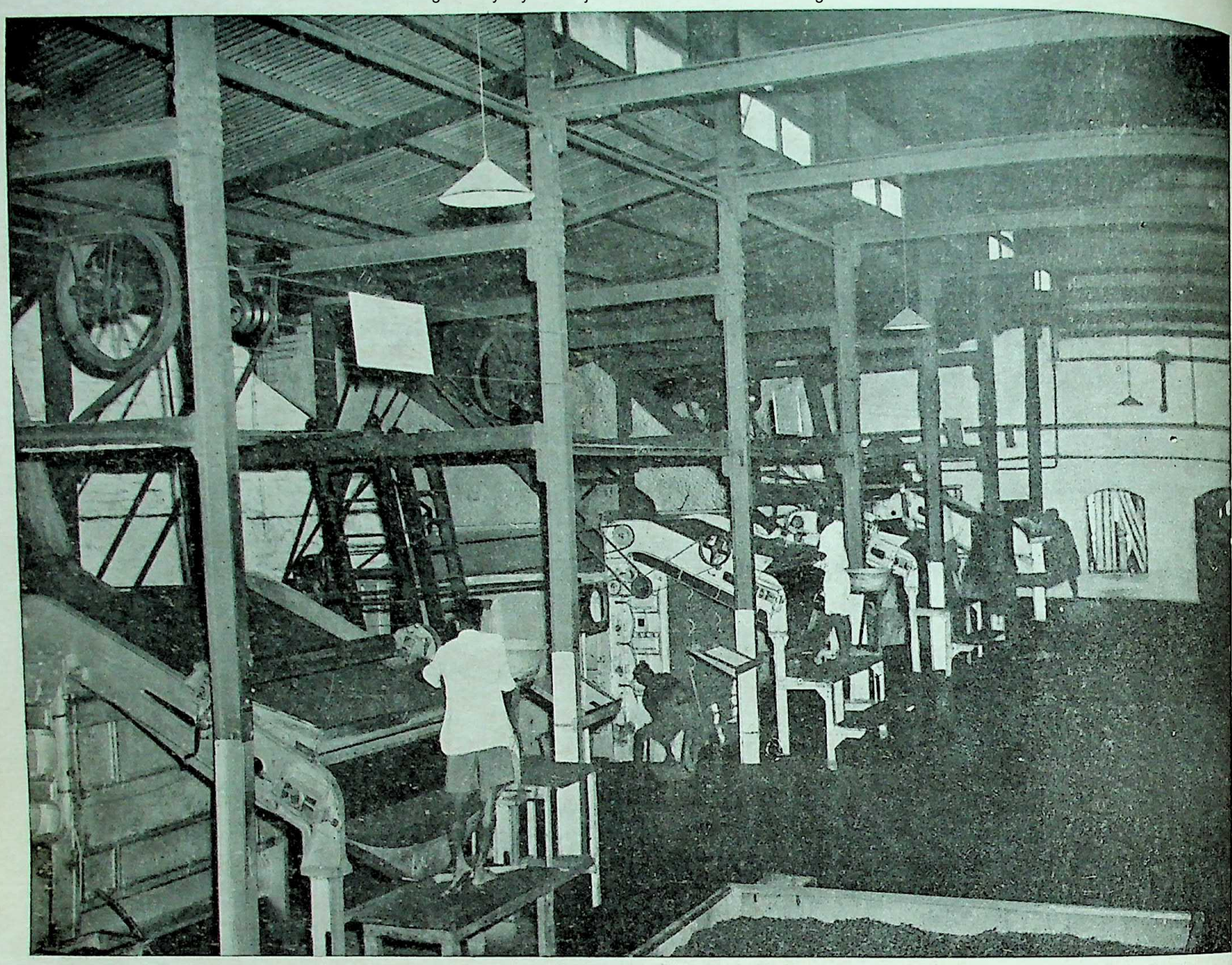

The heating of fermented and damp leaves

During fermentation the macerated leaves and the juices contained in them pass through a vital change; their original colour turns into a coppery-red, and the characteristic flavour of tea has now been extracted. The fermented leaves—still damp and sticky—are then removed to hot chambers and there heated to a temperature of 190 to 200 degress—a process which is called firing. During this final process the leaves assume the black appearance with which all of us are so familiar.

The leaves are now ready to be sorted according to their size into grades of standard type and then packed in paper-lined chests with lead or aluminium foil to protect them from the atmosphere to which tea is very sensitive.

Although the flavour and characteristic qualities of tea are regarded as a mystery inherent in nature itself, the physical processes involved in the actual manufacture of the tea contribute largely to its final quality as a commercial product.

On arrival of the teas from the gardens to the warehouses, firms of brokers are made responsible for the sale of the tea. Their first duty is to inspect the contents of the chests to see that they have not suffered any damage in transit from the garden, and then samples are drawn from each consignment and sent to prospective buyers.

The next and, probably, the most important stage in tea marketing is the tasting which is done by an expert tea-taster who has before him row upon row of little white china pots and a small china bowl in front of each pot. An equal quantity of tea is put into each of these pots and boiling water is poured on the leaves.

The brew is allowed to stand for five to six minutes. The taster now begins to take a sip from each pot and his trained palate at once records the merit of the tea. With almost uncanny accuracy, he is able to grade the tea for valuation.

After the auction the buyers take delivery of the teas and export them to various countries throughout the world, where on arrival the skill of the tea-taster is again called upon, because the tea has now to be prepared for the consumer, who very rarely gets the tea of only one garden. What he gets is blended tea which probably contains the teas of half a dozen or even more gardens.

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The blender, who is also an expert tea-taster, is thoroughly conversant with the quality of water in different regions and the tastes of various sections of the public, and is, therefore, able to contrive blends of various teas which would suit the palate and also the pocket of all classes of customers.

The preparation of tea for the market is a long and intricate chain of operations—but this is necessary because consumers the world over are growing more and more fastidious in regard to the quality of the tea which they drink.

The extent of India's stake in the world trade in tea can be assessed from the fact that her share in the world's total supply of tea is nearly 55 per cent and that she exports about 70 per cent of her own output. With the propaganda drive in the dollar areas and certain other overseas markets, undertaken in collaboration with the tea interests of the countries concerned, beginning to yield satisfactory results, it is expected that India's tea export figures may increase still further in the near future.

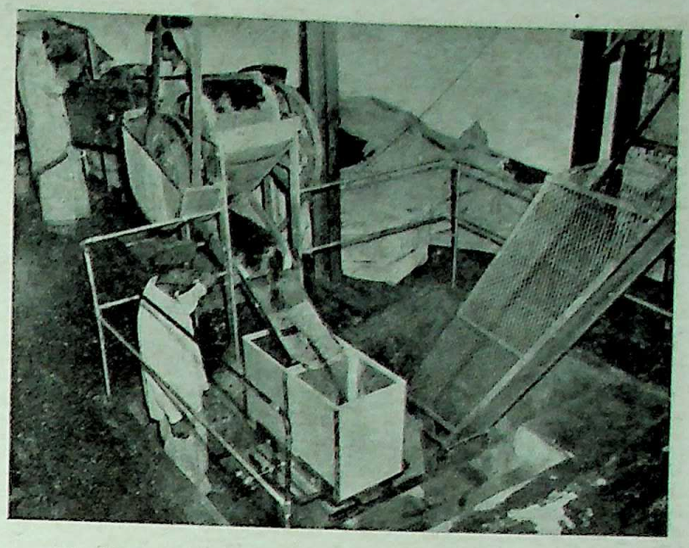
Knowledgeable quarters maintain that the capacity of Indian tea to contribute to the foreign exchange resources of the country has by no means reached its limit. Sir P. J. Griffiths, Adviser to the Indian Tea Association, London, recently expressed the view that the world demand for tea was likely to increase in 1954 and that India was the only tea-producing country at present capable of increasing her output.

As the per capita consumption of tea in India—less than half a lb. a year—is deplorably low in comparison with the figure of 9.5 lb. in the U.K., a strong case certainly exists for stepping up the home consumption of tea. Even at the turn of the century the importance of the domestic clientele of tea was recognised and it was felt by the authorities that, if the average Indian would consume 1 lb. of tea per annum, a big step would have been taken towards the improvement of the home market.

Realising the need for closer association of the Government with the tea industry in view of the latter's importance to the national economy, the Government of India established the Tea Board in April, 1954, under the Tea Act, 1953, in supersession of the Central Tea Board.

Besides carrying on propaganda for increasing the consumption of tea in India and in countries abroad, the Tea Board is empowered to exercise control not only over the export of tea and the extension of cultivation of tea but also has powers to discharge other functions aimed at an all-round development of the tea industry and tea trade.

The annual consumption in India of 175.7 million pounds of tea may be comparatively small, but it is heartening to know that potentially India is not only a big but a fast-expanding market for tea. Looking back at the popularity progressively gained by tea as a beverage in this country over the last two decades, we find that the total internal consumption stood at little over 38 million pounds in 1930-31; it doubled itself in six years and rose to 79 million pounds in 1936-37. It passed the 100 million mark in 1940-41 and in the last 13 years has risen by about 75 million pounds.



Packing tea leaves in chests lined with paper, lead and aluminium foils

In a country of vast distances with inadequate transport facilities and widespread illiteracy, where messages take long to travel and longer to register, the force of propaganda that has been responsible for increasing the consumption of tea by nearly 450 per cent in less than 25 years deserves a tribute.

As Sri T. T. Krishnamachari, Union Minister for Commerce and Industry, observed recently, "In several parts of the country, it (tea) has become a way of life for large numbers of people". At the same time, it must be recognised that in a country of nearly 360 million people where the purchasing power of the public is expected to rise steadily with the progress of the Five Year Plan, the internal market for tea possesses about limitless possibilities of expansion.

The Indian tea trade and industry are, therefore, faced at present with the task of developing the home market side by side with expanding the export trade, which has proved its vital worth to India's economy as a whole. Recent attempts to maintain quality standards are a step in the right direction. It has already accounted for improvement in the trade situation and is expected to go a long way in satisfying the demand of both home and foreign markets which are unmistakably showing the capacity for discrimination of quality.

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The high ground jute ready for harvesting

Jute Industry

M. C. Mukherji

NINETY-NINE years have passed since the first Indian machine jute spinning mill was cradled on what had once been the garden retreat of Warren Hastings and "his beloved Marion" at Rishra, 13 miles upstream from Calcutta.

So old, yet so little known has the industry remained even to the Calcutta intelligentsia until after the 1947 partition. To people outside Bengal jute has meant hardly more than a vague crop-name conjuring up visions of gold. Legends grew up round the Midas race running the industry, at whose touch everything was popularly supposed to turn to gold.

Behind this myth lay appalling ignorance on the subject of jute, due, on the one hand, to public apathy and, on the other, to the jute trade's insularity. Mill interests have been singularly shy of publicity, always preferring the background. So is the commodity they handle, whose use is generally half-hidden from the eye.

Jute has rightly been termed the Cinderella of textile fibres. Ever modest and shy it serves inside or at the back of an article.

Yet for all practical purposes jute's versatility is unlimited. Jute is everywhere, in one form or another, in the home, factory, workshop and office; on farms and in mines; in road, sea and air transport; even in film studios and theatre houses. It is sacks and bags, rope, twine, cordage and string, hessian, scrim and canvas.

Quietly it forms the lining of an ambassador's shoes and the backing of an eye-filling, gorgeous carpet. The woven jute fabric has still a wider range of application. As bag jute carries the world trade in an infinite range of commodities. As a packaging material jute is ubiquitous either as wrapping, bagging or baling.

Delegated to an humble utility job the mighty jute industry stayed on the sidelines, unobtrusive and aloof. Jute was undivided India's monopoly in the world market. Nestling in security, manufacturers seldom bothered whether one person in a hundred knew what jute was, that hessians were made from jute, or what burlaps were. All was seemingly well with the world of jute.

The industry burst into prominence overnight by being divorced, in its ninety-third year, from its traditional source of raw material. The whole of India turned jute-conscious as the implications of the Partition of Bengal became widely known, for it is no exaggeration today that the financial well-being of the new Republic

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depended a great deal on the fortunes of its jute mill industry.

Jute is the largest earner of foreign exchange, providing very nearly half of the entire export trade of this vast country and is at least the third largest dollar earner for the Sterling Area as a whole.

The jute industry's position can best be appreciated in terms of its capital investment, its labour costs and its contribution to revenue. The total fixed and working capital employed in it during 1950 amounted to Rs. 668.5 million. Mills had built up another Rs. 204.4 million in reserve funds at the end of 1946. They have been providing well-paid jobs to over a quarter of a million workers, who constitute roughly 10 per cent of the total population engaged in factory labour in India.

The industry's wage bill in a year adds up to Rs. 250 million excluding the cost of pensions, maternity leave and benefit, creches, canteens, schools, etc. As a revenue earner the Calcutta mills occupy almost a unique position in the economy of India. The value of the industry's output of manufactures at present levels is over Rs. 1,500 million annually.

Despite a sharp fall in prices, gunny exports during 1953-54 have fetched India a revenue of the order of Rs. 1,180 million, plus Rs. 145 million derived from taxes on jute and jute goods. The industry also provides indirect employment to numerous intermediaries in the jute trade, while furnishing by its demand for raw material, the means of livelihood to nearly two million agriculturist families.

All these are more or less well-known facts today. But what Calcutta owes to jute is not so well-known. The "golden fibre" did more to the capital city of Bengal than cotton did to Manchester and, later, Bombay.

The Kaliedoscopic improvements—a first class port and railway facilities, growth of an excellent inland water transport service and installation of high-powered electricity supply stations—that hastened Calcutta's promotion to the rank of second city in the British Commonwealth followed closely on the rapid progress of the jute mill industry and the fabulous fortunes that accompanied it.

Even the Calcutta Improvement Trust—to which the city owes a great deal for its present prosperous look—was originally financed by the products of this vast trade and industry. Not only that several other industries in Bengal and Bihar such as coal, iron and steel, brass, leather and timber have waxed fat on thriving business with the jute mills. Most important beneficiary, however, has been the coal trade that for many years had found an assured and lucrative outlet for a fair chunk of the mines' output.

The rise of the jute mill industry to prominence corresponded with a steady decay of what had been a flourishing handloom industry in Bengal. Centuries before British occupation hand spinning and weaving of jute was extensively practised in all the populous eastern districts of Lower Bengal.

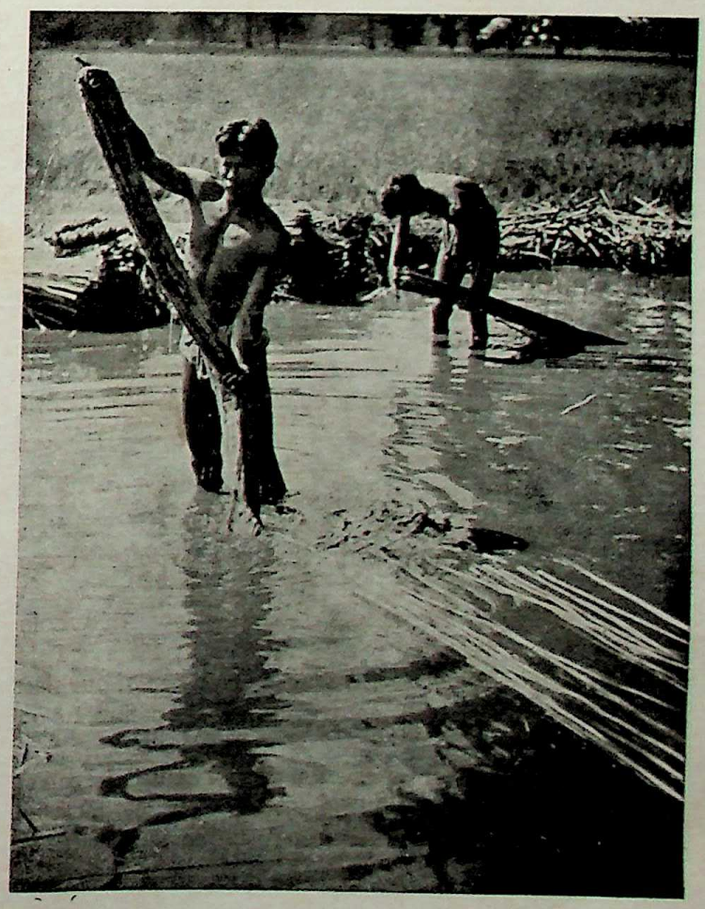
This cottage industry had for long supplied the material for lines, cordage and screens, as also bedding cloth, matting and garments for the poor and turned out jute bags for the handling of sugar, coffee, grain and other agricultural produce. It was, however, due to the far-seeing business acumen and enterprise of the East India Company that its commercial possibilities in cloth making were made known to the outside world.

The distaff and the handloom began really to flourish in the first quarter of the 19th century when under the Company's patronage jute cloth and bags made their way to Java, Borneo and other nearby ports.

The handloom industry reached its high water-mark around the fifties as further demand quickly followed principally for packing cotton cloth or bags for America and Bombay. It penetrated into almost every household, providing men, women and children a fine spare-time job and helpless Hindu widows their sure source of an honourable, independent living.

In 1850-51 the value of hand woven jute cloth and bags and also of raw jute exported from India amounted to over Rs. 4.1 million. The major consuming markets were the U.K., France, Germany, North America, South Africa, Burma, Ceylon, Java, Penang and Singapore, Australia, Arabia and the Persian Gulf, and Mauritius. There was at the time "no other article so universally diffused over the globe as the Indian gunny bag".

Removing jute-stalks for drying



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From the jetty to the godown

The cottage industry showed signs of languishing as mill-made jute cloth began to be produced commercially first in Dundee since 1838 and, seventeen years later, in Calcutta. After 1885, the jute products of the cottage industry rarely figured in the country's export trade and eventually ceased altogether. Most of the centres in West Bengal districts which once hummed with the activities of a busy community at work with the traditional spinning wheel and handloom were squeezed out of existence.

Until 1837 Dundee flax and hemp spinners had been guaranteeing their products as "free from Indian jute" of which some small, irregular supplies were being received in London since 1793 and in the Scottish town after 1822. Prejudices died hard even if whale oil solved the jute batching problem in 1832. "This new fibre would tend to lower the character of our flax manufacturers very much" was one early comment on jute.

Then occurred four events, which saw the Indian jute firmly saddled in the Scottish flax town. The first was the Dutch Government's order to Dundee in 1838 for all-jute bags to be used in handling their East Indies coffee, in place of flax bags till then customary. Other three events were the Crimean War (1854-56) which interrupted the supply of Baltic flax, the American Civil War (1860-65) cutting off imports of cotton into the Northern State from down South, and the 1870 Franco-Prussian War.

Movements of large armies in Europe and America over lengthy lines of communication required a steady provision of tremendous quantities of jute bags which were by then doing the job quite as well as linen or cotton bags. From 1870, as the flax trade waned, spinners fattened on the new fibres. Indian jute now happens to "guarantee" Dundee's affluence. Though Calcutta has long since outstripped it in size and strength, Dundee remains the cradle of the jute mill industry.

While the U.K. was pioneering the commercialisation of jute and its mechanical processing, other countries were taking note. After about 17 years during which Dundee had already made fortunes and also priced out the Indian hand-made goods from the Bombay cotton packing market, it occurred to an Englishman that manufacturing jute at the source of

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the raw material would be more advantageous than anywhere else.

He was George Ackland, formerly of the East India Marine Service and then for some time a coffee planter in Ceylon. To him goes the honour of founding Eastern India's most important and profitable industry. In 1855 Ackland, with machinery imported from Scotland, launched the first spinning mill on the bank of the river Hooghly at Rishra.

With Ackland, the pioneer, another Bengalee name —that of Bysumber Sen who backed up the English man's venture with considerable finance — has gone down in the history of jute industry in India. From this modest beginning, giving an output of eight tons a day, the industry has now the capacity to turn out over 5,000 tons daily.

In the place of that one mill there are today 112, with 72,000 looms. Calcutta produces more in a month than the parent Dundee can in a year. In fact, the vast majority of jute goods consumed in the five Continents since the turn of the century has been made on the banks of the Hooghly within a few miles from Calcutta.

Surrounding economic factors such as proximity to the sources of raw jute and coal, easy availability of skilled labour from Serampore and its ring of satellite towns, and navigability of the Hooghly for sea-going vessels have favoured concentration of the jute mill industry in and around Calcutta.

The jute industry in India has got to its present size in no planned manner. Every boomlet was followed by a thoughtless addition of looms. As a result, seldom has it been possible in the earlier stages of fantastic growth to keep production in line with possible demand for jute goods. Even as early as 1875-80, four mills out of a total of 13 went to the wall as their aggregate output shot ahead of the intake of the then export markets, and the history of the industry till 1913 is replete with recurrent crises of overproduction with the resultant evil of price-cutting among mills.

The I.J.M.A., which came into being in 1884 as a result of the joint effort of 15 mills to redress the situation, initially devoted its labours to get the member mills to agree on a common level of fair prices. Utterly frustrated it abandoned this method in favour of short time working. Several agreements on restricted working, which before the first World War were observed often more in their breach, nevertheless highly succeeded in bringing about a sense of cohesion and realism in the early post-war years and again during the critical "thirties" by saving the industry when perilously near disaster.

While production was curbed, the productive potential went on increasing unchecked with occasional spells of good business and the 1914-18 war seemed to be the best and longest of them bringing an almost inexhaustible demand for all forms of jute goods. As was expected, the industry reaped very big profits from the war.

This prosperity led to the building of more mills, and an increase in the loomage of those already established. From 64 mills with 36,050 looms in 1913, the industry expanded to 100 mills with around 61,834 looms at the end of 1930.

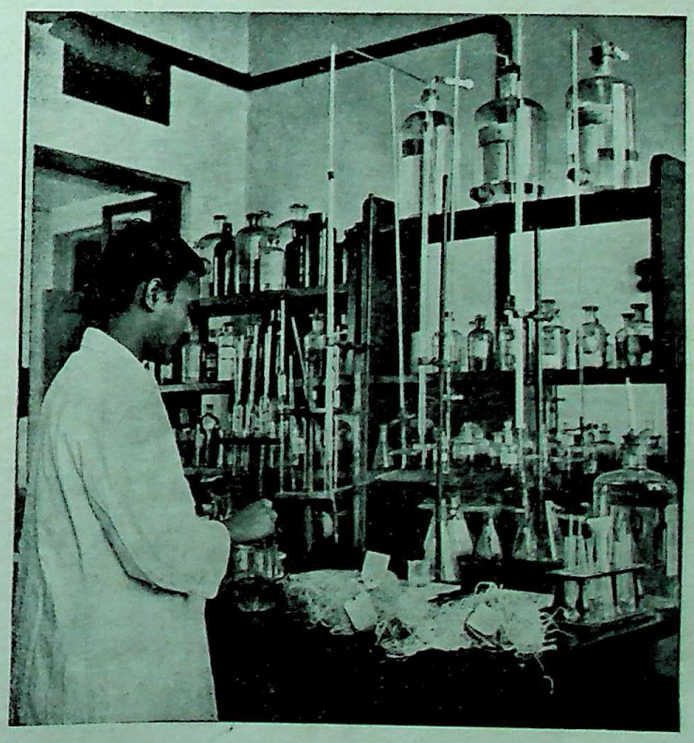
Between the two wars the industry enjoyed boom conditions twice, during 1926-29 and 1935-37. Records, still unbeaten, were made in two directions. Indian mills earned their biggest trading profits in 1928. The country exported its highest tonnage of gunnies in 1937.

Beyond 1929 was the "burst and chaos" of depression. Mills came out of it greatly damaged due to shrinkage beyond recognition of their production, profits and exports. The post-depression recovery proved short-lived and mills found themselves again on the brink of overproduction in 1938 when there were definite signs of demand lagging.

The outbreak of World War II in the following year came as a much-needed stimulus to raise the industry from the morass of despondency. Orders worth Rs. 1,000 million were placed. But if the war brought a great deal of business, it also brought the beginning of a phenomenal rise in manufacturing costs in which both wages and raw material were involved.

The Achilles heel, masked by the war, was exposed following on the 1946 decontrol. As the prices of raw jute soared, one condition of the gunny cloth's monopoly as packaging material—namely, its cheapness—, was gone. Secondly, long interruption of the normal supplies of gunnies for consumer use aided the growth of alternative packaging methods in India's erstwhile export markets.

Assessing the quality of jute



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Thus, the present day problems of high cost production and substitutes owe their origin to the last war. It had been hoped that with ample jute supplies in the post-war period the costs would be reduced.

That was not to be. To the 100 and odd mills their vital raw material became a scarce foreign commodity by virtue of the partition of Bengal. With it went the second condition of jute's monopoly—namely, its plentitude. High prices were not to matter yet. But the scarcity of jute due to Indo-Pakistan differences was a tragedy.

The industry missed a grand opportunity to rehabilitate itself and let it pass to paper and cotton bags as well as the bulk handling methods to consolidate their gains on jute's markets made during the war. Since 1946 one most remarkable phase in world recovery has taken place due to the inevitable switch over of war economy to meeting the needs of a vast consumer demand which had been lying pent-up during 1939-45, and restoration of production in devastated areas.

In the past, the jute trade flourished in every boom of the world commerce, and its periodic upheavals were caused solely by overproduction The setback between 1947-51 was however essentially due to underproduction forced on the industry by a near famine condition of its raw material.

Thus, the stimulating effects of the post-war recovery in international trade releasing with it an inordinate demand for packaging material slipped between the fingers. Nor could full advantage be taken of the sharp rise in commodity prices in the earlier stages of the Korean War.

The unexpected turn of the devaluation arising from Pakistan's refusal to comply with the Sterling Area's policy had very adverse effects on India's jute economy during 1949-52. High prices played havoc. Imports of Pakistan jute, ever halting and irregular, came almost to a dead stop after the "rupee crisis", while larger quantities became available to the reviving U.K. and Continental industries.

For nine months beginning from July 1952, India's competitive position was further eroded by a discriminatory Pakistan levy on jute exports to India. As a result, by comfortably underquoting Calcutta in the hessian markets European manufacturers built up a fortune, part of which went to finance complete re-equipment and modernisation of their factories.

Their low production cost due to labour saving devices, fine finishing and easy adaptability to changing fashions in the packaging world—all pointed to the lead gained by the European jute industries. While the industry here was losing heavily in an unequal contest, substitute packaging, mainly paper, gained fresh momentum to fill up the gaps in Indian supplies and new jute manufacturing units sprang up in other parts of the globe.

Since with partition India's monopolistic hold on raw jute had ceased, these new manufacturers had no problem for raw material which they could buy from Pakistan on the same terms as India.

When all is said, the industry's performance in the export markets over the past two years raises hope of an early come-back. The tide has definitely turned in favour of India. Successive reductions in export duties by the Government have taken the sting out of foreign competition. The great challenge of partition on the raw jute front has been successfully met.

The acreage of good quality jute grown in India is on the increase. About two-thirds of the industry's requirements of good jute can now be had within the country itself. A further expansion is confidently looked for. The Government is doing everything within its means to help the industry in getting a high yield of superior fibre at a reasonably low price.

Apart from the raw jute supply position, the industry draws confidence from the fact that, in spite of the recent difficult times, its reserves of technical skill and experience remain unimpaired. Its trade contacts overseas have been strengthened.

The publicity campaign in America drawing consumers' attention to the present abundant and regular supplies of burlap at steady prices and, latterly, to jute bag's advantages over other forms of packaging has had good results by and large.

Some former protagonists of bulk-handling have also been won over. Successive goodwill missions led by the I.J.M.A. to the major markets overseas have convinced users of the industry's anxiety and ability to perpetuate jute's ancient virtues of cheapness and plentitude.

While trying to extend the use and suitability of the standard products for a wide variety of purposes, the industry is spending millions of rupees on research to develop new types of manufactures to provide an outlet for its huge surplus productive potential.

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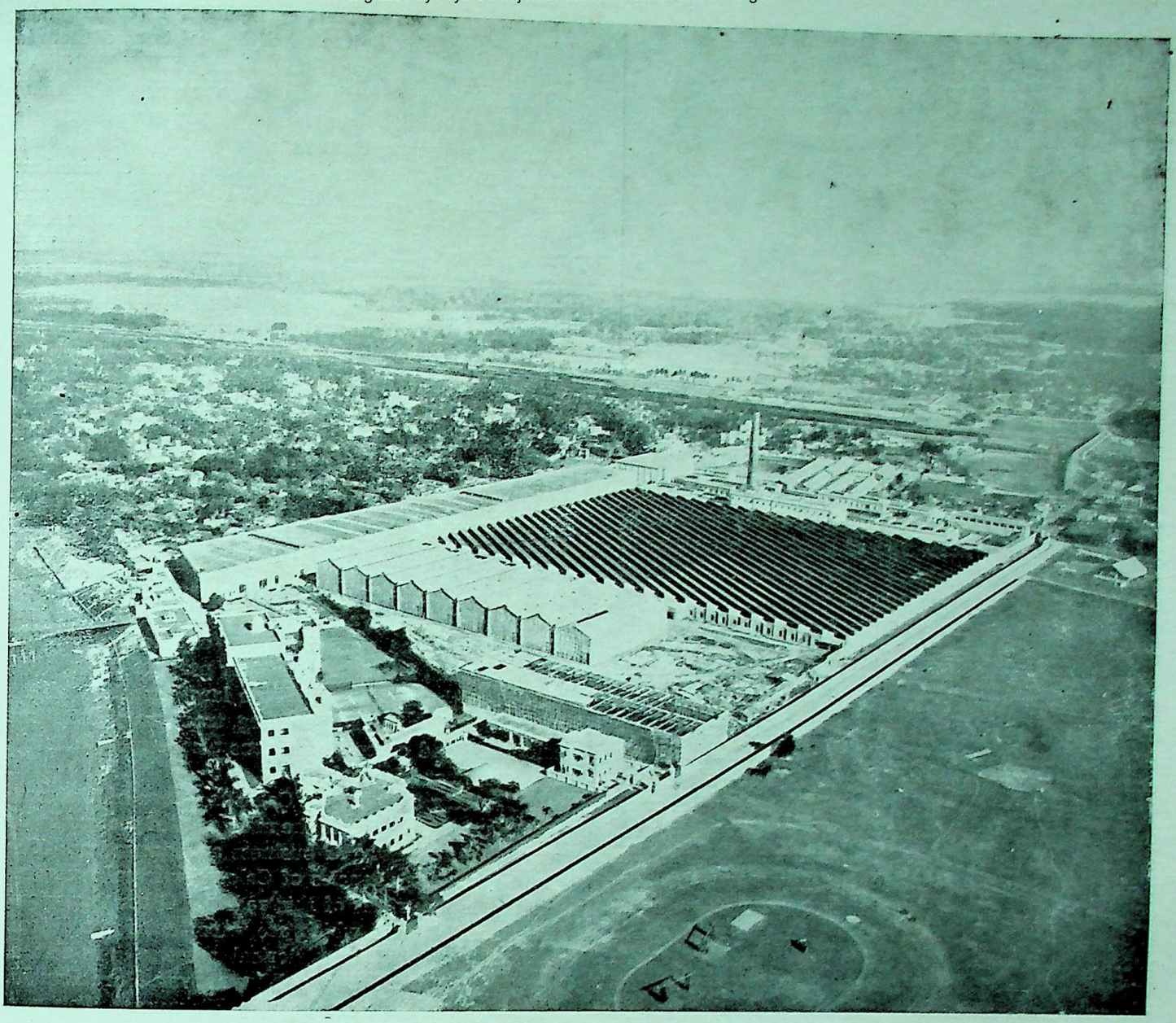

An aerial view of the Reliance Jute Mill

Business and Industry

Ashoke Chatterjee

WHEN Alexander the Great invaded India in 326 B.C. and exchanged hostilities with the border chieftains of the Punjab, his spies described to him what military might he should expect to face if ever he really entered the Gangetic Plains of India. Mahapadma Nanda, he was told, ruled his great empire of Magadha from the mighty city of Pataliputra (modern Patna), and his armies had countless war elephants, a tremendous array of fighting chariots, never-ending waves of mounted swordsmen and a myriad foot soldiers. The earth shook when Mahapadma Nanda went into battle, and his unconquerable forces stretched to distant horizons, beyond range of the keenest eye. Alexander's soldiers refused to advance into India proper, and his invasion went into reverse even before it had really got under way. The Nandas were not so organised and prosperous as the later Mauryas but, according to Greek writers, they maintained armies consisting of three to four thousand war elephants, two thousand chariots, twenty thousand horses and two hundred thuosand infantry. This evidenced a material civilisation of considerable pro-

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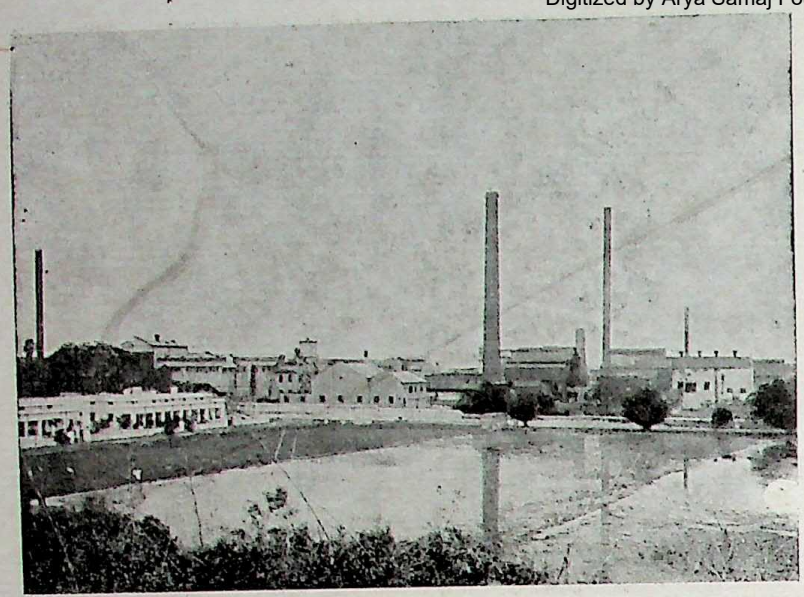

A general view of the Bengal Paper Mills

portions, the richness of which is fairly accurately reflected in the *Arthashastra* of Kautilya, a treatise of great documentary value, written during the reign of the first Maurya, Chandragupta.

Asoka, the greatest of the Mauryas, the greatest of all kings of all times for that matter, extended his empire far beyond the borders of modern India and Pakistan and down to Mysore in the South, by force of arms in his youth and by an enlightened moral code later on. Asoka's preachers travelled to the farthest corners of Asia by land and by sea, and his vast empire was governed and compactly held together by an organisation which would only have been possible with an economic background of a complex and highly specialised type. The great ships of Asoka and his successors ploughed the Indian ocean and the Chinese and Indonesian Seas, and the cultural message of India reached many lands in this manner as well as through those who came to India from afar in search of enlightenment or adventure.

The political and economic centre of gravity thus shifted to the eastern parts of India even before the Christian era, and great cities grew up in this region with their seats of learning, religious centres, markets, ports and military strongholds. One hears of Rajgriha, Pataliputra, Nalanda, Vikramashila, Tamralipta, and of various other places in eastern India from the earliest times. This development of Magadha, Vanga, Kalinga and other states might have been the result of the devastation caused by the wars of the Mahabharata in North-Western India or by the rise of Buddhist power which was propagated more in eastern India to begin with. This politico-economic development in eastern India retained its individual strength through the Muslim era, and is noticed when Europeans began their exploitation of India. The present-day industrial and commercial growth of eastern India thus has a background of craft, skill and economic endeavour which stretches far back into the dimness of prehistory. It is based on the agricultural, forest and mineral wealth of this region, and also on the activities of the foreign adventurers who were tempted by these natural resources to start settlements in these parts. Thus on the one side the mythological tales of Behula and Chand Saudagar and the history of Vijay Sinha's expedition by sea to Sinhala (Ceylon) or the remains of the Metallurgical furnaces of Nagarjuna at Nalanda corroborate the assertion that eastern Indian economy had its roots in the earliest days of Indian civilisation; while the history of the European Indigo planters and the exporter of east India Muslins tell us how that economy was tempting foreign adventurers to these coasts as recently as in the 18th century. The part played by religion in this great and ageless story is shown up by the mighty temples at Bodh-Gaya, Jagannath-at-Puri, Bhuvneswar, Konarak, Kamrup and Kalighat, and the various places of pilgrimage and the great religious festivals.

Eastern India is largely constituted by the States of West Bengal, Bihar, Orissa and Assam. These States have a total area of 257,000 sq. miles approximately, and a population of 88 million. The peoples of these States intermingle easily and there is considerable movement of population from one State to another in this area. The principal languages spoken are Bengali, Hindi, Oriya and Assamese and the religions followed by the vast majority of the people are Hinduism and Islam. As in other parts of India, agriculture is the occupation of the largest section of the population, but industry, mining, trade, transportation, commerce and other occupations also employ a fairly large number of people.

The City and Port of Calcutta is one of the most important in Asia and is the main port of eastern India as well as its centre of business and commerce. The great managing agencies of Calcutta virtually control the major industries of this region. Other important towns in this area which are important for political, economic, cultural or historical reasons are Patna, Cuttack, Gauhati, Shillong, Bhuvneswar, Puri, Ranchi, Imphal, Agartala, Sambalpur, Vishnupur, Sonepur, Murshidabad, Jamshedpur, Asansol, Gaya, Bhagalpur, Bhatpara, Darjeeling, Malda, Darbhanga, Muzaffarpur, Chappra, Jalpaiguri, Kalimpong, Rajgir and many smaller centres of trade, craft and pilgrimage.

The most important and extensively cultivated crop of this region is rice. Apart from the employment that rice cultivation provides to the people of eastern India, its storing, transport, husking and sale employ a vast number and constitute a major trade and industry of this region. Apart from the cottage industry which small scale hand and foot operated husking devices have created in the village homes, hundreds of power-driven Rice Mills have come into existence, which employ thousands, and enable the smaller capitalists to engage in an economic enterprise of basic importance to the nation. Among other food crops which largely meet regional requirements are wheat, pulses, gram, maize, millet and spices. The area produces a wide variety of vegetables and fruits of which mangoes are supplied to other parts of India. Among the produce of the soil tea, jute and sugar-cane are the outstanding cash crops, and the numerous tea

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gardens, jute bailing, spinning and weaving mills and the sugar mills are vital cogs in the country's economy. The tea gardens of eastern India account for 75 per cent of the tea grown in the country. The acreage under tea in this region is about 500,000 acres, and the industry gives employment to about 700,000 persons, not counting those who are earning a living by the sale and transport of tea and in administrative and office jobs connected with the management of the plantations and the export and marketing of tea. East India exports several hundred million pounds of tea annually and this accounts for the major portion of Rs. 800 million that India obtains by the sale of tea to foreign countries.

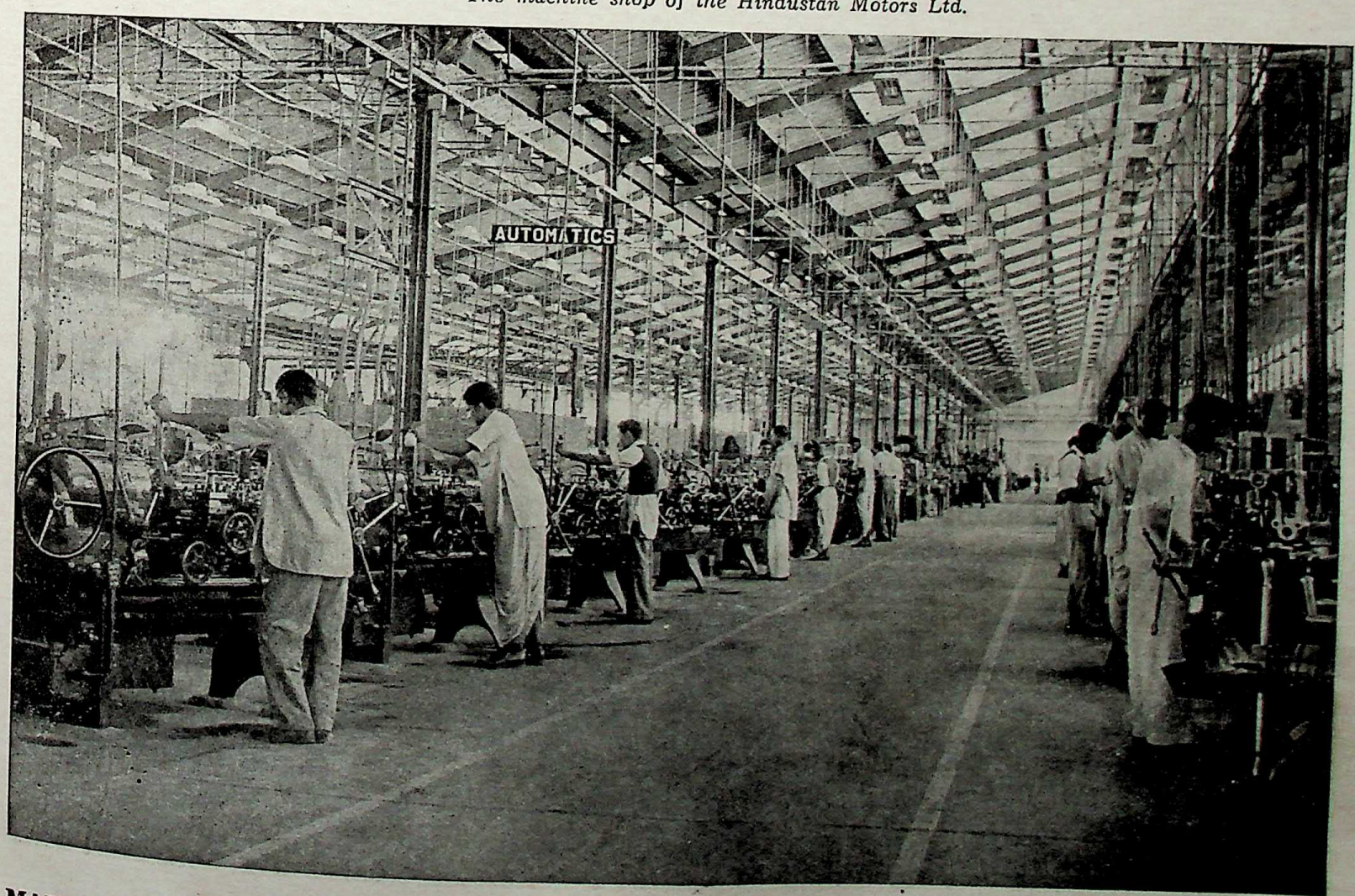
The cultivation of jute is another great agricultural enterprise of the east Indian cultivators. They hold a virtual world monopoly in this line, and the jute trade and industry have given employment to nearly 400,000 persons. India's sale of jute and its manufactures to foreign countries bring an annual revenue of 130 crores of rupees into the country. The long string of well organised jute mills on both banks of the Ganga in Greater Calcutta illustrate very clearly how economic forces bring about the local sation of industries. The mills are also a fine example of how well industries can be developed in India. The jute trade further gives an occupation to thousands in the city of Calcutta who are engaged in its sale and export and in administrative and various other capacities.

India produces a very large quantity of unrefined sugar (jaggery or gur), and about one million long tons of refined sugar. A considerable portion of this is produced in eastern India, and the cultivation of sugar-cane is a very remunerative line of agriculture in this area. Sugar mills number over four hundred in India and employ nearly 100,000 persons. Eastern India accounts for nearly half of this and of the export revenue of four crores of rupees derived from the supply of sugar to foreign buyers.

Sericulture or the cultivation of silk worms and the extraction of silk employs a very large number of people in India. Silk mills number over five hundred and employ about 300,000 workers. Eastern India, particularly Assam and West Bengal, specialise in silk cultivation and manufacture. Assamese Endi and Muga silks are famous and so are the Garads of Murshidabad, Malda and Vishnupur. Orissa and Bihar also excel in silk production. The tussore silk of eastern India is a particularly strong variety of natural silk and is the basis of a widespread cottage industry in this region. Silk weaving, embroidery, dyeing and printing employ vast numbers and the trade in silk goods is proportionately profitable and extensive.

More than half the land in eastern India consists

The machine shop of the Hindustan Motors Ltd.



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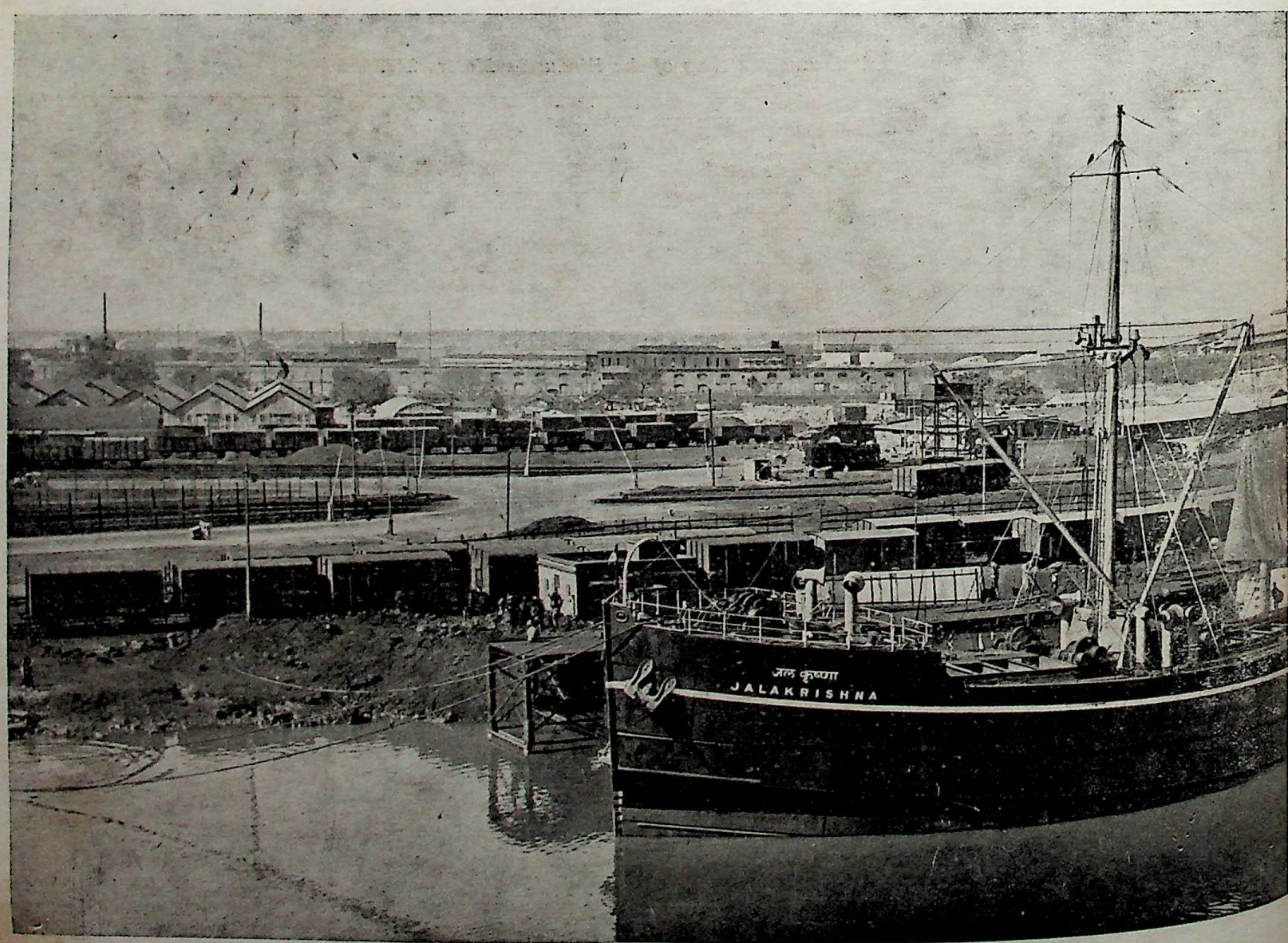
of forests or barren tracts. These parts produce a large variety of forest products and minerals. Of the forest products the most important in eastern India are timber and lac. Charcoal burning and the procurement of different kinds of fruits, seeds, barks, roots and leaves for which there is industrial, medical or other requirement, employ large numbers of tribal and other forest dwelling people. Sal, bamboo, *sisum*, teak, etc., are the important wood found in this area. A large number of saw mills operate in this area which employ an appreciable number of workers. The lac trade is quite valuable and yields a revenue of seven and a half crores of rupees from export alone.

Coming to the minerals of this region, one finds that this is the geatest centre of coal mining in India. A major portion of India's annual coal output of 31,000,000 tons is raised from the mines of Bihar and West Bengal with the Assam and Orissa mines adding substantially to the total. The coal mines of eastern India are remarkable for their quality of coal and their very wide seams. Many of these mines are equipped with the latest machinery and gear and coal mining is highly organised in this area. A school of mines for the training of mining experts has been in existence in Dhanbad for a long time and there are adequate arrangements for Mines Safety and Rescue and training for the same. A Central Government institute for the study of and research in fuel has been set up in the Jharia coalfields area, which is doing very useful work. The presence of coal and other minerals in this region accounts for the vast ferrous and non-ferrous metal and engineering industry that has developed here. The various units of this great network of factories, yards, dumps, bunkers and godowns are ever increasing and their growth and expansion are vitally connected with India's industrial planning.

The various mining and quarrying organisations handle the raising of different kinds of minerals among which iron ore comes next to coal mining in point of tonnage, and economic importance. India now raises over two million tons of iron ore annually and this quantity is fast increasing. The deposits of this ore are quite extensive and the Tata Iron and Steal Co., Ltd., and the Indian Iron and Steel Co., Ltd., are now modernising their ore mining at Nayamundi and Gaya.

Copper ore (Indian total annual output 325,000 tons), Bauxite (Indian total 33,000 tons), Manganese (Indian total 40,000 tons) and Mica (Indian total 360,000 cwt.) are important minerals, bringing in a revenue of over 12 crores of rupees annually. Of these, Mica accounts for nearly Rs. 9 crores and Bauxite is responsible for the growth of the aluminium industry in

The Calcutta Port Commissioner's dock-side railway yard



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West Bengal and Bihar. One must mention here that Assam produces petroleum to the extent of 270,000 metric tons and although other places in India have shown signs of having underground this very valuable mineral no other place has produced it commercially.

Coming now to the industrial centres of eastern India, one has to give the place of honour to Greater Calcutta. There is a concentration of jute and cotton mills here and a very highly developed handloom industry which produces some of the finest cotton saris and dhotis in India. The Calcutta area also has a very large number of engineering shops which do structural work, rerolling and remelting of steel, railway coach and wagon building, bridge sections, cranes and conveyors, boats, launches, flats and small ships, tugs, etc., foundry work of every description, machining, shaping, welding and fitting of all kinds, motor car building, repairing and assembling, repair of locomotives, marine engines and all types of steam, petrol, kerosine and crude oil engines; building, assembling and repair of electrical motors, generators, compressors, pumps, etc., as well as refrigerators, water coolers and air-conditioners. The Calcutta industrial area has also a large number of glass factories, tanneries, hosiery mills, flour and oil mills and a wide range of factories producing lamps, lanterns, stoves, cookers, untensils, scientific instruments, buckets, steel trunks, leather goods, rubber shoes, rubber sheets, waterproofs, umbrellas, tarpaulins, ropes, string, enamel ware, porcelain, china and earthenware, cutlery and implements, steel springs, tubes, pipes and conduits of different types and numerous other small metal products. Of the other large industries in this area, paper and straw board manufacture, cigarettes, canning, biscuit making, the manufacture of metal boxes and containers, plastic goods, drugs, sera, vaccines and medicines, heavy chemicals, soap and bye-products, the generation of electricity and the production of coal gas require mention. Printing, book binding, production of newspapers, periodicals and books, and the manufacture of stationery including pencils, pen holders, fountain pens, maps, charts, etc., also constitute an important branch of the economy of Greater Calcutta. There are large timber yards in this area and the making of furniture, packing cases, crates, painting, varnishing and upholstery occupy a large number of people. There are also some modern match factories in and around Calcutta. The manufacture of storage batteries, portable flash lights of all kinds, electric bulbs, fans and motors should also be mentioned. The fine arts employ a good number in this area. Painting, sculpture, modelling, decorating, embroidery, gem-setting, gold and silver ornaments and objects of art, photography, engraving, making plate ware, the manufacture and assembling of radios, gramophones, gramophone records, musical instruments, cinematography and the making and projection of cinema films, theatres, vocal and instrumental music, signboard writing and painting, the arts related to publicity and so on, engage a good number of persons.

The commercial side of the economic life of this great city and its suburbs is a cross-section of the export and import trade of India. Virtually all exports and imports of a large part of India pass through the port of Calcutta. As a result of this, large commercial houses have grown up in Calcutta, dealing with jute, tea, cotton goods, lac, mica, various minerals and forest products, foreign machinery, ferrous and non-ferrous metal goods, heavy chemicals, foodgrains, precious metals, industrial raw materials, optical instruments, cameras, motor cars, trucks, engines, generators, cables, chains and a long list of goods required for general consumption and the industries. The commercial life of Greater Calcutta is also the commercial life of the whole of eastern India and of all India in bits and patches. The International aerodrome of Dum Dum in Greater Calcutta, the Calcutta docks and the railway termini of Sealdah and Howrah, linking Calcutta with the different parts of India, show up clearly the importance of this city in Indian and world economy. Hundreds of thousands of people depend on the commercial life of this city, and fortunes are made and lost here every day of the year. The great Stock Exchange of Calcutta and its jute, tea, bullion, salt and other produce markets, pulsate with activity right round the clock, and their transactions run into millions of rupees every day.

Another large concentration of business and industry in eastern India is in Jamshedpur, where the Tata Iron and Steel Works is situated. This is one of the largest of its kind in the world. Jamshedpur now has a large number of big factories manufacturing agricultural implements, wire, nails, etc., tin plate, deisel engines, castings, steel tubes, railway rolling stock and various other things required by Indian industry.

The Asansol area has the second largest iron and steel factory in India. The Indian Iron and Steel Co., Ltd., has a very modern plant at Burnpur, near Asansol, and also a subsidiary plant at Kulti in the same region. Kulti has very large and mechanised foundries, too, which make castings of all descriptions including spun pipes. The Indian Standard Wagon Co., Ltd., at Burnpur has a large factory for building railway wagons and manufacturing their components, while, at Kumardhobi, there is a large engineering and rerolling works. Of the other important industries in the Asansol area the Government Locomotive Factory at Chittaranjan, the Sen-Raleigh bicycle factory at Kanyapur, the paper mills at Ballavpur, the Hindustan-Pilkington Glass factory and the Distilleries at Asansol, the Aluminium factory at Jaykaynagar, and the Refractory works at Kumardhobi and Ranigunj, should be mentioned.

The great river projects namely the Damodar Valley, the Mayurakshi and the Mahanadi projects, together with their power generating and distributing centres, are changing the face of eastern India. Electrification is going on apace all over the area, and the full effects of this will take some years to be truly manifest; but the future of eastern India economy is very promising, and its prosperity will surely be much more than proportionate to its area and population in the very near future.

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Harvesting in fields reclaimed under the Sonarpur-Arapanch Scheme

Developing West Bengal

S. K. Dey

THERE never was a story without its background, and the account of the efforts of a people and their government to improve their condition is no exception to this rule. Various reasons make this background particularly important in obtaining a true perspective of the plans of development in operation in the State of West Bengal.

The war, famine, outbursts of communal frenzy, inter-district shifts of population in panic, enormous loss of territory at partition with the residue left in three disjointed portions, massive and uncontrollable movements of the dispossessed and displaced across the newly determined boundaries,—anyone of these events would be a major catastrophe in the history of a people. The inhabitants of this region have suffered all of them in quick succession within the last twelve years. It is essential to bear this in mind in any attempt to understand what goes on here.

One feature about our schemes of development is common with the rest of India. Few of these were thought out and started for the first time since April 1951. The commencement of the current Five Year Plan is counted from that date. But most of the measures included in this Plan had not only been projected but also initiated long before that date. History is never written on a clean slate and this carry-over was inevitable. But two important consequences should be noticed.

The war was still being fought when the then British Government of India urged the provincial administrations to prepare plans for post-war reconstruction. There was a back-log of needs in many fields which could not be attended to during the war. There were also the sterling balances and funds accumulated on Government account through sale of supplies to the war machine.

There was a spate of planning in every provincial capital and at Delhi. Every Department of Government was asked to state what it wished to be done in its own sphere. Their demands were then put together to constitute what was thought of as the Plan.

Planning was then a magic word. It had lately

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leapt into fame because of results claimed for experiments made in Russia, Italy and Germany and for President Roosevelt's New Deal. There was very little understanding of what it involved. Certainly, a string of departmental ambitions does not make a Plan. That is practically all we then had.

There was no reasoned allocation of all available resources for a balanced development of the entire economy. Nor, in the prevailing circumstances, could there be any association of the people at large in formulating the proposals which were made by the different branches of the then administration.

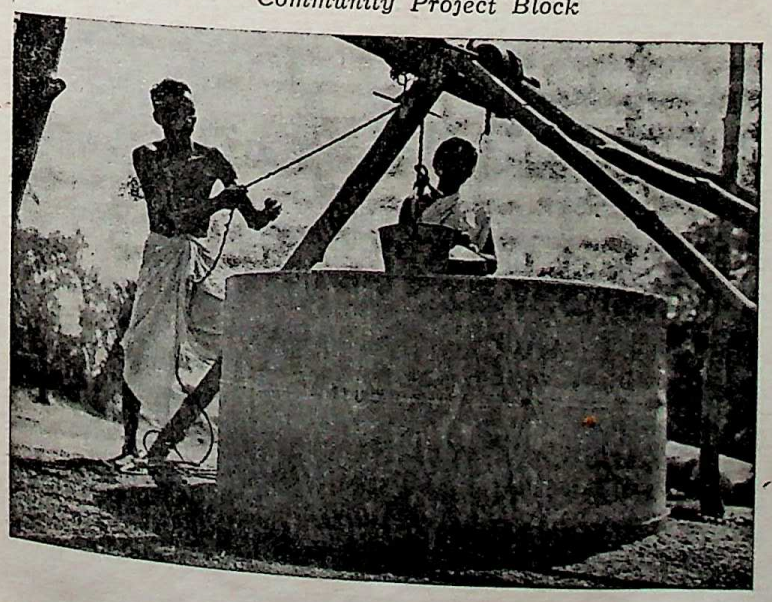
Nevertheless, a start was soon made with the execution of some of these proposals. Blue prints were finalised for others. Consequently, when the new Government came to power after independence, it found resources already committed to various schemes from which it was not possible to withdraw without wastage of assets.

Some of these schemes were good and would have been taken up anyhow, such as the Mayurakshi scheme for irrigation and generation of hydro-electric power. Others, like the Haringhata Cattle Farm, might have been planned differently. Still others might have been deferred to a later stage if the choice had been open. All that was practicable was to review measures already planned and initiated against a new framework of values, and drop, modify, add to them and rearrange their priorities in the light of such review.

In one respect substantial changes were unavoidable. A new pattern of requirements emerged directly to the fore as a result of the partition of the old province. Nowhere was this more vivid than in the set of proposals concerned with the development of new roads. The configuration of the new State demanded fresh alignments.

Certain areas sprang into economic and strategic significance which were relatively unimportant before, and new lines of communication had to be laid down for them. Resuscitation of rivers, particularly of the Bhagirathi-Hooghly system, became a matter of vital concern.

A ring-well built by the villagers in Ahmadpur Community Project Block



Along with this was the question of land reclamation through irrigation, drainage, afforestation and other measures of erosion control and of improvement of the deltaic region known as the Sunderbans. The loss of fresh water fisheries to East Pakistan compelled immediate attention to possibilities of systematic exploitation of the estuaries and the Bay.

The Plan at work in West Bengal has to be seen as a complex of responses to these emergent requirements superimposed on a pattern of inherited measures. The requirements are emergent in the sense that there is no finality to them. The Plan as it was first approved contained no provision for the very important projects of community development. These were incorporated in 1952. Last year was taken up the programme of National Extension Service.

The year 1952 saw the beginning of another new line of development in the Local Development Works. A special set of measures was also undertaken for areas affected by scarcity. We have recently decided upon a number of schemes of permanent improvement in the Sunderbans.

Additional housing schemes have been sanctioned, also an increase in the fleet of buses run by the State transport authority in Calcutta. A large number of teachers have been engaged for rural areas. Attempts are being made to reorganise small units of production in various lines, such as in engineering establishments in Howrah.

Many of these schemes are directly aimed at creating new opportunities for employment to counteract a developing recession. But there have been also others directed to the building up of long-term capital assets. Investigations have been under way to this end for commercial exploitation of gas from the city sewage in Calcutta, for reclamation of derelict saline marshes lying to the east and south of the metropolis, and for the establishment of a group of industries based on coal and its derivatives in the area around Durgapur.

Thus, the Plan is a living, growing, organic entity, changing slowly even during the period of its currency, impossible to contain once for all within completely rigid limits. It keeps spilling-over all the time, although administrative decorum and tidiness would not have it so. Needs which were latent grow sharp and clear and clamour for articulation through projects and schemes which have to find a place in the Plan.

There are financial bounds, and these are specially stringent in a hard-pressed State like West Bengal. There are stretching and straining at times, but life asserts its elasticity once again, there is readjustment and the seeming bulges are shaken down to shape.

These changes are, however, peripheral and marginal. There is a solid deposit of long-standing, approved schemes which constitute the main body of the Plan and give it its form. They are mature in execution. These may be described in brief, broad terms.

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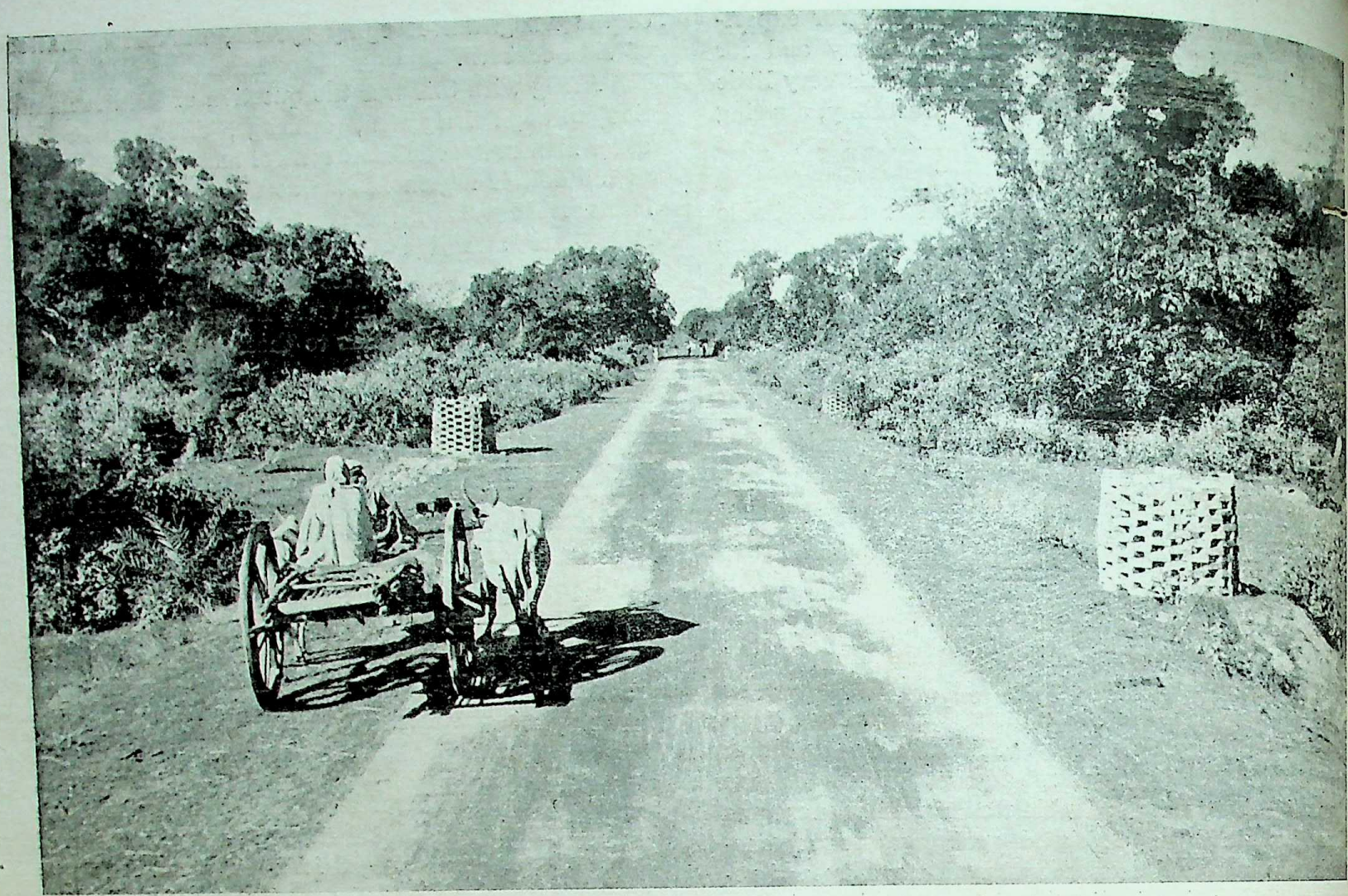

A view of Berhampur-Kandi Road

Measures estimated to cost Rs. 104.9 million are being implemented under agriculture and rural development. These include the provision of recurrent supplies and services for the small peasant, originally planned for the grow-more-food campaign. Agricultural and veterinary education and research are also being expanded and improved. The staff has been strengthened.

Better breeds of cattle and poultry are being raised in the State farm at Haringhata and at other centres and multiplied through an extension programme. Simultaneously, attention is focussed on better supply of fodder. Supply of dependable milk to Calcutta has been enlarged and improved and steps have been taken to ensure better care of city cattle in well-organised colonies.

Private forests are being brought under better management and waste lands are steadily reclaimed with new forest cover. Marine resources continue to be explored for augmenting fish supply and all branches of the inland fisheries industry receive capital assistance and technical advice.

Many thousands of tons of improved seeds, manures and fertilisers have already been distributed under these measures. Thirtyfive thousand acres of waste lands were brought under arable cultivation by the end of March 1954. Over 3,000 petty works of local irrigation were executed during the same period. In addition to these, over 1,700 irrigation tanks were put in order. About 3,800 acres of waste lands were brought under State forests and 5,000 acres of private forests were taken up for improved management. About 12,500 acres of water area in tanks were treated for improved fish farming.

The Haringhata farm has raised a herd of about 1,800 heads of cattle, of which about 250 are improved bulls for stud purposes. The dairy attached to this farm has a total daily output of 280 maunds of fresh pasteurised milk, of which 245 maunds are purchased from local milkmen, thus providing them with an assured market at a fair price for their enterprise.

It is estimated that an expenditure of Rs. 75 million will have been incurred in the first three years of the Plan on all schemes included in this section out of the total provision of Rs. 104.9 million for the entire five year period of the Plan.

We are completing major projects for irrigation and drainage calculated to benefit a million acres of land at a cost of Rs. 153.7 million. The largest of these involves the harnessing of the Mayurakshi river through a dam in Bihar and a series of barrages and connected network of channels lower down in our own State. This work is already yielding results in assured and increased harvests over 120,000 acres of land.

A battery of electric pumps of large capacity has set free 26 sq. miles of rich paddy land from many decades of water-logging in the south of Calcutta. The total area already receiving the benefit of the various

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major projects is 325,000 acres. A power supply project, completed at a cost of a little over Rs. 7.5 million has opened up long stretches of the country to the use of electricity for agricultural and industrial development. The estimate of expenditure incurred in the first three years of the Plan on schemes of this section is Rs. 93 million out of a total provision of Rs. 161.3 million for the entire Plan period.

A relatively modest sum of Rs. 11.7 million was earmarked in the original Plan for direct action in the industrial sphere. The measures undertaken have mostly been concerned with cottage and small-scale production through provision of capital assistance and training, research and marketing facilities. Large-scale undertakings were left to private enterprise and their overall controls necessarily vested with the all-India authority at the Centre. The State Plan aimed at indirect encouragement through provision of a favourable framework within which private enterprise could flourish.

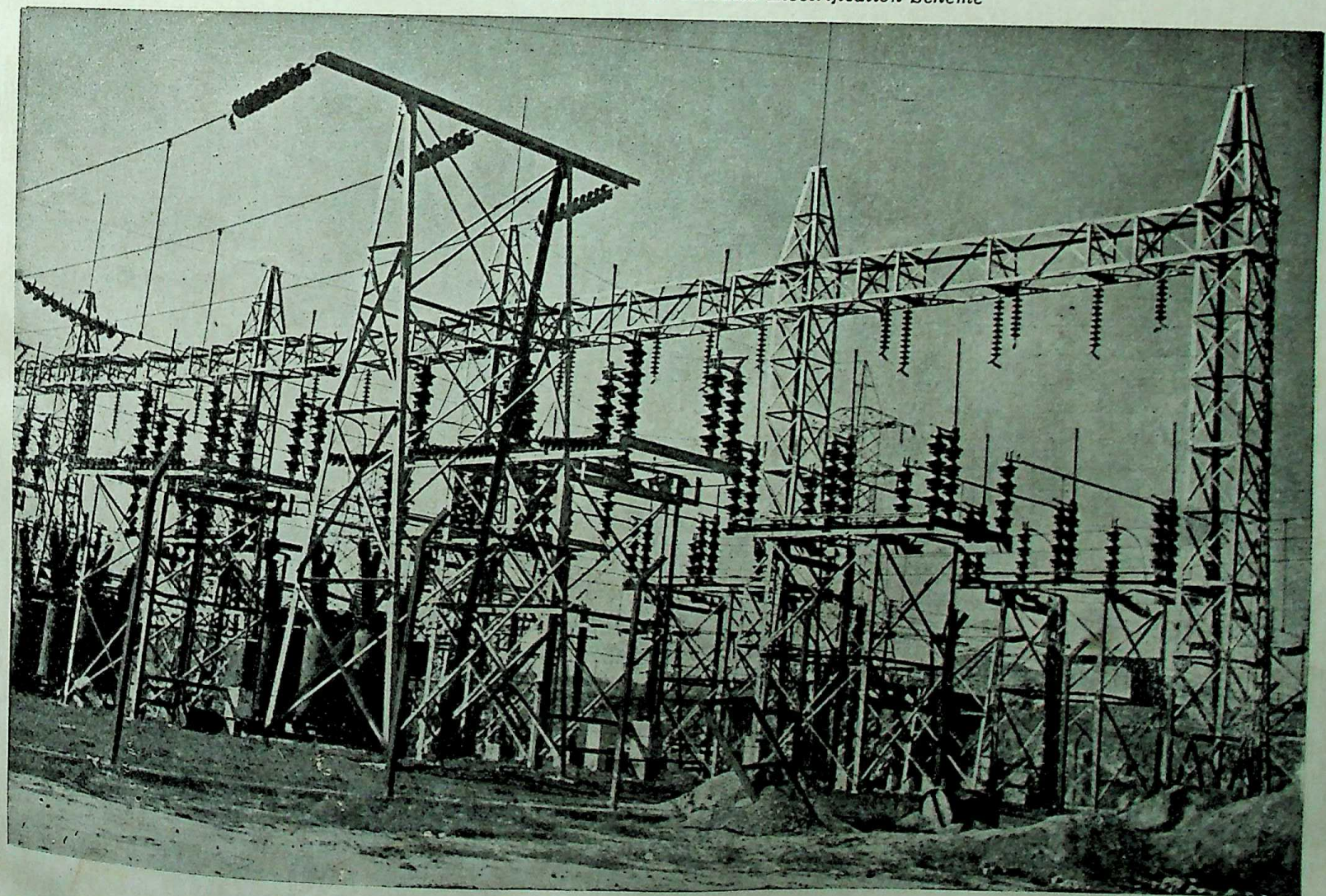
The work of road improvement is important for this among other reasons. About, 1,700 miles of roads are being built at a cost of Rs. 138.5 million of which more than 1,400 miles are ready in different stages of completion. These include many new and fine bridges. We are also building about 300 miles of national highways within this State on behalf of the Central Government and at their expense.

The State transport service in Calcutta is running a fleet of over 300 passenger buses in the city on more than a dozen important routes. Provision was made for an expenditure of Rs. 19.1 million on this service in the original Plan. Of this Rs. 8.4 million are expected to have been spent up till March 1954, affording greatly needed relief to the citizens of Calcutta.

A matter of special pride with us has been the attention devoted in our Plan to improvement and expansion of the social services, comprising measures for education, medical relief, public health, housing and amelioration of the so-called backward classes. Nearly Rs. 255.4 million out of the total expenditure of Rs. 691 million proposed in the original Plan are earmarked for expenditure on various categories of social services. Of this sum, over Rs. 80 million are being spent on improving every stage of general and technical education from the primary and basic to the graduate and post-graduate standards.

The measures also embrace social education for adults, physical instruction, youth welfare and expansion of library facilities. Schemes for medical and public health improvement cost Rs. 151.4 million. These are being executed to raise the standards and expand the facilities for medical education, nursing and pharmacy training, hospital care, particularly in the rural areas, water supply and sanitation in the urban and rural areas and control of malaria.

A sub-station of the North Calcutta Electrification Scheme



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Special attention is being devoted to maternity and child welfare and control and prevention of tuberculosis, venereal diseases and leprosy. The cost of the housing schemes contemplated in the original Plan is Rs. 22.3 million comprising mainly the work undertaken in establishing a new town of about 6,000 acres of inhabited area.

What are the accomplishments we may take credit for under social service schemes? One college and 12 schools for imparting training in basic education are already in operation. About 278 new junior basic schools are working. Primary school teachers have benefited by an increase in their pay scale. Twenty-four new girls' schools have been opened covering all the districts for teaching up to the secondary standard. Larger facilities have been provided to the two engineering colleges at Sibpur and Jadavpur. Over 1500 social education centres are functioning in the rural areas.

An improved college is working for the teaching of dentistry. The Campbell Medical School is now functioning as the Nilratan Sircar Medical College with an increased number of beds. A training centre for nurses is working at Burdwan. Pharmacy training is being provided in Jalpaiguri.

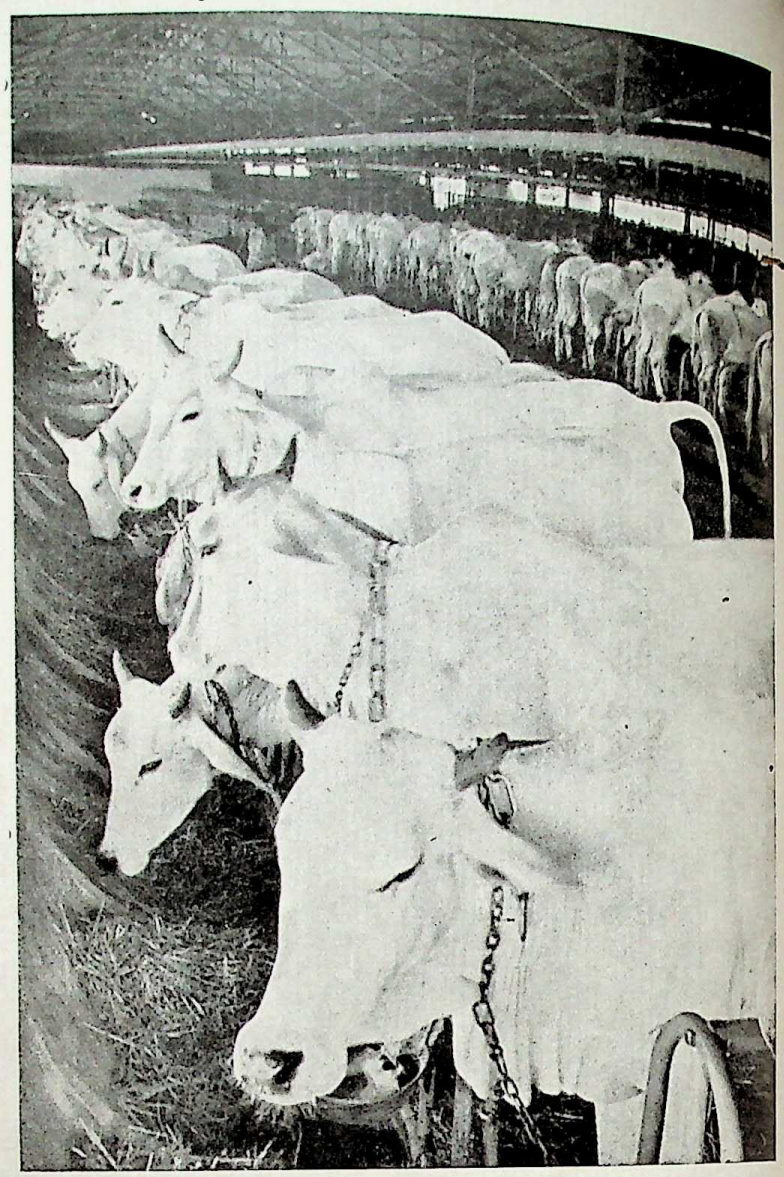
Out of 166 health centres working in rural areas, only 71 were opened before the start of the present Plan period. About 730 tuberculosis patients are provided for at Kanchrapara and Digri. Thirty clinics for the treatment of venereal diseases have been opened. Nearly 1700 sources of dependable water supply for drinking purposes were provided in the rural areas under the specific scheme included for this purpose in the original Plan.

Water supply and drainage were improved in three municipal areas. Sixteen anti-malaria units are operating to cover as many million people in all the districts of the State. An extensive campaign for BCG vaccination is being carried on. Seventeen maternity clinics are in operation.

Roads, underground sewage and electric lines have been laid on over most of the areas in one of the six blocks in which the site of the new town at Kalyani has been divided. A modern sewage treatment plant is working and building sites are being sold. Twenty-six model buildings have been erected besides certain public buildings like the school and the market place. Arrangements are being made for locating some of the Government offices at the new town. Out of Rs. 255.4 million provided for schemes in this section in the original Plan, Rs. 131.4 million are expected to have been spent by March last year.

It may be noted that out of the original provision of Rs. 691 million made in the Plan, Rs. 385.3 million are estimated to have been spent in all by March 1954 on the various schemes included in that Plan.

As has already been mentioned many other schemes have since been taken up under the Plan and appreciable progress has been recorded in respect of these additional schemes. Some of these, such as the projects for community development and national extension service are rapidly assuming a central significance in our overall development programme.



A cattle shed in Haringhata dairy farm

There have also been other schemes which were never taken into account in the Plan itself. These have been worked as parts of the normal routine of the different Departments, although they, too, have made substantial contribution to the improvement of different aspects of the life of our people.

This account of the work which has been planned and done in different spheres of economic and social development in this State will perhaps only serve to highlight the vast area which yet remains untouched. Our needs are large, while our disabilities are grave and present resources meagre. Dissatisfaction is understandable in these circumstances.

But it would be unfortunate if this were to be merely disheartening and frustrating, instead of being a spur to further and sustained efforts. For this reason it is good to remind ourselves that a start has been made and that what has been achieved lays down a foundation for progressive advance.

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Patriotic Songs of Bengal

Prabodh Chandra Sen

THE modern mind is characterised by a consciousness of country and of nation. In Bengal this consciousness has been in evidence since the beginning of the nineteenth century. At that time the country was prostrate in subjection. The idea of a national state had not yet put in an appearance.

Therefore patriotic feeling sought and found an outlet in a passionate love of the mother tongue, Bengali, rather than in the soil of the motherland. The Bengali language and its literature was a refuge. The Bengali heart and mind were free there even when the power of the British was at its height.

Ramnidhi Gupta (1741-1828) was the first Bengali poet to have a knowledge of English. His many songs, written over a long period of time, made the skies of Bengal ring to their music. In one of them his love for his mother tongue finds deep expression. He wrote :

"Many are the languages in the many lands!
Can we realise our hopes through any
But the language of the land of our birth?
Many waters fill the rivers and the lakes.
What is that to the *chataki?*
Can any water but the water of the rain
Quench the thirst of the delicate bird?"

For over a century the heart of Bengal has been possessed by this love of its own language. In the beginning of the twentieth century the nationalist poet Dwijendralal Roy (1863-1913) addressed himself to his mother tongue in these words :

" If you make room for me at your lotus feet,
O sweet mothering Bengali speech,
I shall not seek honour or wealth....."

This tender attachment to language may be said to reach its height in a song by Atul Prasad Sen, the famous composer of Lucknow, which begins thus :

" Oh our Bengali language, our pride, our hope!"

Iswar Chandra Gupta (1812-59) is the next poet after Ramnidhi Gupta whose name must be mentioned in this connection. Although he himself did not know English, its influence is evident in his work. He gave expression not only to linguistic patriotism but to a love of the land itself. This appeared for the first time and is not without depth :

"Your mother-tongue is as your mother,
She fulfills your hopes.
Serve her joyfully".

and:

"Look upon your countrymen
With a sense of brotherhood
And eyes filled with love....
Only he who dwells in a foreign land
Knows how to love his own country.
In your meditations
Paint on the background of your mind
All things relating to your country
With the brush of feeling...."

Love for one's fellow countrymen is born out of the pain of subjugation to a foreign people and love for one's native land finds its most intense expression among exiles. Iswar Chandra Gupta felt both. The thought of

"How subjection to an alien ruler
Eclipsed the smiling moon of a happy land, his own land"

Hurt him so deeply that he cried out in his agony :

"As a mother's suffering saddens her sons
India's plight breaks my heart..."

Out of the pain of subjugation arises the vision of freedom and the resolve to achieve it. To this the poet Rangalal Bandyopadhyay in his *Padmini Upakhyan* (1858) was the first to give voice. In this poem he demands :

"Who cares to live without freedom?
Who cares to live
Who likes to wear slavery's chains?
Who likes these chains?"

These and other similar lines form an unforgettable part of Bengali literature. It must not be forgotten that Benagli literature was stirring with the new inspiration of patriotism at the time the British Empire was shaken by the Sepoy Mutiny. In his very first work, *Sarmistha* (1859), Michael Madhusudan Dutt issued a stirring summons to the awakening national life :

"Hear me, O land of India!
How long shall you sleep?
You ought not to sleep any longer
Arise ! Shake off your slumber !
The dawn has come. The dawn !
The lord of the day has appeared in the East !"

In *Meghnadbadh* (1861) this strain is even more insistent :

"Who fears to die in defence of the land of our birth
Crushing our enemies in battle?
Who is afraid? Only the stupid coward!"

At the beginning of the nineteenth century this type of thinking was still inconceivable to the Indian mind.

It was not long before this dream of freedom and the passionate longing for it took shape in action. The

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first national organisation in Bengal, the Hindu Mela, was founded in 1867. This Hindu Mela prepared the ground for the growth of the national consciousness before the Congress era. At its annual session the opening song that was most often chosen was *Gao Bharater Jay* (Sing the Triumph of India) by Satyendranath Tagore. Here is the first verse:

"Together all India's children,
Tuning in unison hearts and lives,
Sing the praises of India!
Where is there a spot
To compare with India?
What mountains are more glorious
Than the Himalayas?
Fruitful is India's earth,
Watered by her sacred rivers,
A treasure-house of jewel-filled mines!
May India be victorious!
Victory to Ind! Victory!
Sing the triumph of India!
What do you fear? What do you fear?
Sing the triumph of India!"

This song can claim to be India's first national anthem. In 1873 Bankim Chandra Chatterji, the composer of *Bande Mataram*, wrote of it: "May this great song be sung everywhere in India. Let it echo from every cave of the Himalayas! May the trees on the banks of the Ganges, the Jamuna, the Sindhu, the Narmada and the Godavari murmur with its melody. May the united waters of the Eastern and Western seas roar in tune with it. May the hearts of the two hundred million Indians resound with its music!"

It is worth noticing that in the first part of *Bande Mataram*, as in the first part of this song, the country is apotheosised as the mother goddess. Also:

"Fruitful is India's earth,
Watered by her sacred rivers....."

recalls the adjectives chosen by Bankim Chandra for *Bande Mataram* "well-watered, sweet-fruited". We find as well the sentiment expressed in these lines of *Bande Mataram*:

"Why, Mother, with so much strength
Are you so weak?"

in this line of the earlier song:

"Are you afraid to gladden your mother's face?"

Rabindranath Tagore was young when *Gao Bharater Jay* (Sing the Triumph of India) was popular and he grew to manhood in the atmosphere created by the Hindu Mela. It was under this influence that he was later to write *Jana Gana Mana*. The feeling which inspired "Together all India's children.....Sing the triumph of India" also inspired the lines in *Jana Gana Mana* which run "The hearts of the Punjab, Sind, Gujerat and Maratha, of the Dravid and Orissa and Bengal.....sing thy triumphs!" And a foretaste of Subhas Chandra Bose's *Jai Hind* is also to be found in the refrain of this song, "May India be victorious! Victory to Ind! Victory!"

In this connection the song *Namo Hindustan* (Hail Hindustan!) by Rabindranath Tagore's niece, Sarala Devi, should not be forgotten. It was first sung in 1901 at the seventeenth session of the Congress which was held in Calcutta. Mahatma Gandhi was present. These are the opening lines:

"Sing today, Hindustan!
My muse hymns the ancient glory!
Sing today, Hindustan!
Splendid is my muse.
Sing the name that fills with strength and fame and fragrance!
Hymn Bengal, Bihar, Utkal, Madras, Maharastra, Gujerat, Punjab and Rajputana!
Hymn Hindu, Parsi, Jain, Christian, Sikh and Muslim!
Sing together in all tongues, 'Hail Hindustan!'
Jai, Jai, Hindustan! Hail Hindustan!"

The influence of Satyendranath Tagore's *Gao Bharater Jay* is obvious. Equally plain is the fact that the song foreshadows Rabindranath Tagore's *Jana Gana Mana*. In these three songs we see the same concern for the unity of India irrespective of her different provinces and religious communities.

Bankim Chandra Chatterji's famous novel *Ananda Math* was published in 1882, three years before the National Congress was founded. In this book he put the song, *Bande Mataram*, into the mouth of an imaginary band of patriots pledged to set their country free. The song was securely established in the hearts of the people within a short time after its publication.

In 1885, the year in which the Congress was founded, the *Balak*, a magazine edited by Jnanada Nandini Devi, the wife of Satyendranath Tagore, featured it as an already famous song. Notation for the first two stanzas of the song is given. The same notation is given also in Sarala Devi's book, *Sata Gan* (A Hundred Songs) and the composer of the music named as Rabindranath Tagore. This book was published in 1900.

When the first session of the National Congress was held in Calcutta in 1886 *Bande Mataram* was one of the songs sung. Rabindranath Tagore performed the opening ceremony, singing his own well-known song, *amra milechhi aj mayer dake* (we gather together today at our Mother's call).

Ten years later the Congress session was again held in Calcutta and Rabindranath opened it by singing *Bande Mataram*. It is possible he sang only the first two stanzas. Therefore, it is not surprising that when, in 1937, a controversy raged around this song, he expressed the opinion, through Sri Nehru, that only the first part should be taken as the National anthem.

Jana Gana Mana was sung for the first time at the 1911 session of the Congress in Calcutta as one of the three openning songs. *Bande Mataram* was sung the first day, *Jana Gana Mana* the second and *Namo Hindustan* on the third. The history of the composition of *Jana Gana Mana* is given in my book *India's National Anthem* (1949) and need not be repeated here. Let it suffice to say that from 1911 on it shared national honours with *Bande Mataram*.

When Congress again held its session in Calcutta

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in 1917 the same three songs were sung. *Jana Gana Mana's* popularity was furthered by English translations. The first was published in the Februrary issue of the "*Modern Review*" in 1918 and the poet himself made several subsequent versions.

In 1937 when the choice of a national anthem came up for discussion Sri Nehru and Subhas Bose favoured it. Dr. James Cousins also recommended its selection. It was chosen for the Azad Hind army which Subhas Bose formed in Germany and for the Azad Hind government which he later formed in East Asia. It was at the instance of Subhas Bose that the song was translated into Hindustani.

After August 15, 1947, when a final selection became necessary *Jana Gana Mana* held the attention of the country. It was recognised as India's National Anthem in the U.N. General Assembly in New York the same year and won the world's acclaim by its exceptionally fine quality. And in 1949 the Indian Constituent Assembly announced that *Bande Mataram* and *Jana Gana Mana* would henceforth be the joint National songs.

Twice Bengal has experienced a wave of deep patriotic feeling and been literally flooded with patriotic songs, once during the Hindu Mela period (1867-1885) up to the foundation of the National Congress and again at the time of the Swadeshi movement in 1905, that is, from the partition of Bengal to the restoration of its unity in 1912.

Of those who composed songs in the Hindu Mela period the names of Satyendranath Tagore, Jyotirindranath Tagore, Manomohan Basu and Govinda Chandra Roy are still remembered. Passionate and deep is the suffering to which their songs give voice.

So great was the number of songs composed and sung during the Swadeshi period that it is almost impossible to indicate their character. One or two aspects can be emphasised. One type of song incited to armed revolt. The majority were songs of patriotic devotion. As the Swadeshi movement centred round the partition of Bengal it is but natural that many of the songs should hymn the country. "My golden Bengal", sings Rabindranath, "I love you. Your skies and your winds sound their flute in my life always." And Dwijendralal Roy sings:

"Bengal mine, Mother mine, nurse mine, my country!
Why must you sit in the dust, Mother?
Why are your clothes so soiled?"

The Bengali heart did not seek the liberation of Bengal alone; it longed for the freedom of India as a whole. That is why its suffering was felt in all parts of India. This awareness of the country as a whole is noticeable from about the middle of the nineteenth century.

In many of the songs composed during this period patriotic and Hindu ideals are fused to a greater or less extent. The most famous example of this is *Bande Mataram* itself. There are many others. It is nevertheless true that the majority of the songs were inspired by an impartial non-sectarian sentiment. As an example let me quote from a song that has been heard many thousand times:

"Rise up! Rise up! Rise up! Hindu and Muslim brothers
The flags are flying, the drums are beating. Come all! Come together!
Every son of India, Hindu, Muslim, Brahmo, Christian.
Come! Come wherever you may happen to be.
Advance with three hundred million hearts!
Brothers! Answer the call of our Mother."

The names of only a few of the many poets who wrote at this time can be given here. Others must, inevitably, be omitted. But Rajani Kanta Sen, Mukunda Chandra Das, Atul Prasad Sen, and Kazi Nazrul Islam (who came later) must not be forgotten.

And a little more must be said about Rabindranath Tagore, for he has no peer in this field. The strength and depth of his love for his country is shown in the poem he recited at the Hindu Mela in 1875 when he was about 14 years old. His first patriotic song was published in 1877. Here is an excerpt:

"To you, Mother, I dedicate this body.
For you I pledge this life.
For you tears will flow from my eyes.
Your praises will I sing on my *vina*."

The poet kept the pledge he made in these lines. In 1905 some of his later songs, songs composed in a simple folk idiom, were published in a book entitled *Baul*. One of them still has a strong hold on our hearts. It is *Ekla Chalo Re*:

"If no one comes at your call, push on alone.
Go on alone. Go on alone. Go on alone."

Bengal was partitioned on October 16, 1905. Rabindranath proposed that the people make known their refusal to accept the partition by a symbolic tying of the rakhi on each other's wrists. The hymn which he composed to voice Bengal's resolve to remain united is never to be forgotten in the history of the State. Here it is:

"Bengal's soil, Bengal's waters,
Bengal's breezes, Bengal's fruits,
Bless them, Bhagavan! May they deserve Thy blessing!
Bengal's homes, Bengal's markets,
Bengal's forests, Bengal's plains,
Let them be filled, Bhagavan! Let them be filled!
The pledge of Bengalis and their hope,
The work of Bengalis and their speech,
May these be true, Bhagavan! May they be true!
The life of Bengalis and their hearts,
All the brothers and sisters at home,
Let them be one, Bhagavan! Let them be one!"

Without any hesitation we can say that this song, with its poignant plea for unity, is the culmination of all Bengali patriotic sentiment. It has entered deeply into the hearts of the people, more deeply than any other song except perhaps *Bande Mataram*. It has not ceased to influence the thoughts of all Bengali-speaking people.

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Through Old Calcutta: A Sentimental Journey

Ramesh K. Ghoshal

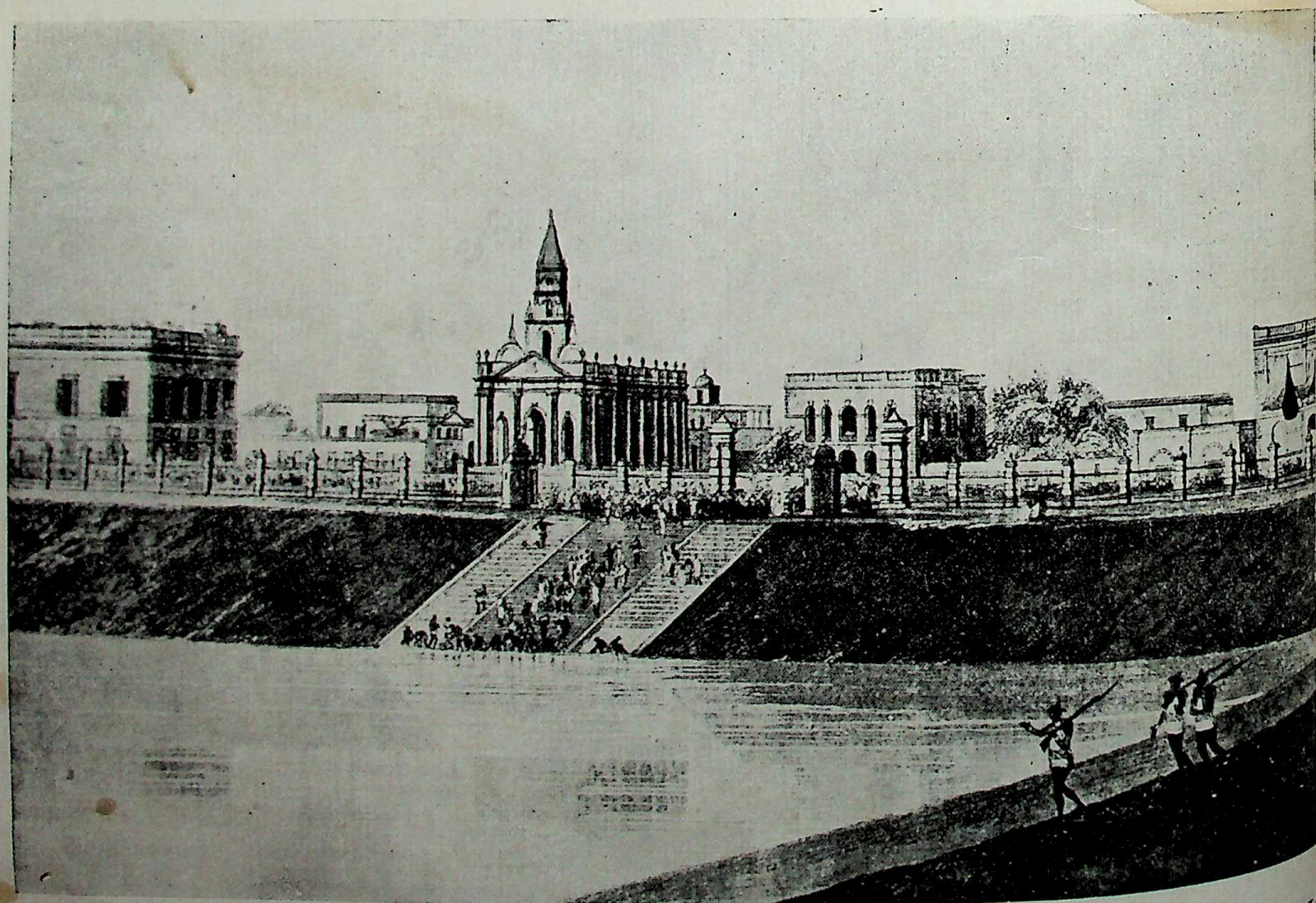
CALCUTTA is a city of two faces: one of these she keeps for those blase, incurious lot who wax eloquent over her outer, material manifestations: her vast size; the six million men that jostle and toss about in her bosom; her acres of beautiful parklands, and immense network of fine, broad streets; her glamorous shops, the schools, colleges and myriad learned institutions—in short, whatever goes to make a city a metropolis. But all this is merely superficial; for Calcutta can boast of far higher, enduring things, things of the spirit, eloquent of the unconquerable mind of man, that mark her out among the first cities of the world.

Calcutta's origins go back to remote times, to days that are hoary with tradition and stirring history. A mighty sea once lapped its angry waves over what is now the city of Calcutta and adjacent land. In immemorial geological times this sea receded and threw up what is now the largest deltaic formation on the earth. After sea water, came the bleak, steaming swamplands and marshes.

At birth Calcutta had a striking affinity with another great Asiatic city—St. Petersburg, both of which arose from primeval swamps. It took centuries for man to hack his way through dangerous forests and fever-ridden country to secure a firm foothold on the Calcutta lands.

Some kind of habitation and organised community

Great Tank, looking east to Old Mission Church



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life in and around Calcutta are indicated as early as the 7th century A.D. by the find of a large hoard of Imperial Gupta coins at Kalighat on the bank of Adi Ganga or the old course of the Bhagirathi. The coins could have come there only by way of trade which is pre-supposed by the existence of nearby Tamralipta (modern Tamluk), one of the most important international seaports in the ancient world.

Tamralipta, in its turn, can be traced back archaeologically to at least 4th century B.C. It, therefore, stands to reason that what is now the greatest city in India existed in the dim past as a cluster of small riparian villages on the Bhagirathi, the great highway of international commerce, deriving sustenance from the massive trade that flowed past them.

Coming down the corridor of time, the earliest direct literary reference to at least a part of modern Calcutta occurs in the Sanskrit *Pitha-mala,* a 12th century work, which specifically mentions Kalikshetra (corresponding to modern Kalight) where, by tradition, the little toe of Sati's right foot fell, thus making it one of the most sacred spots of Hindu pilgrimage.

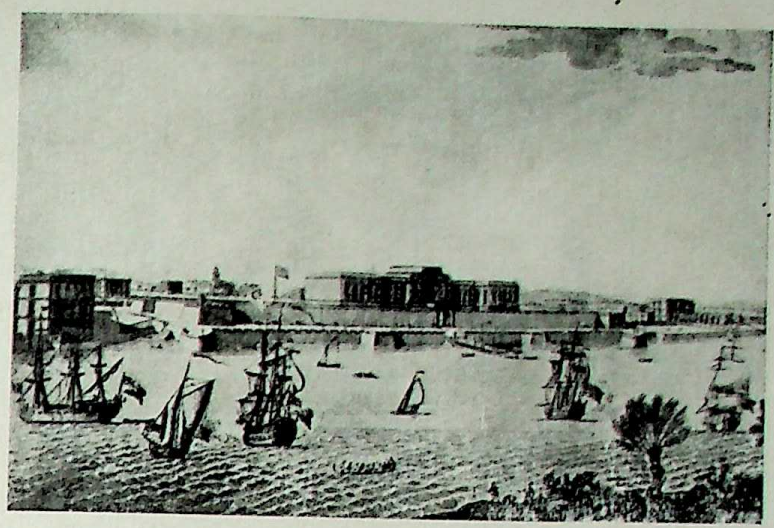
Kalikata (whence, Calcutta), as such, occurs in a number of celebrated Bengali incunabula among which Kavirama's *Digvijaya-prakasa,* Vipradasa's *Manasa-mangala* and Mukundarama Chakravarti's *Chandi-kavya* deserve mention.

It is, therefore, wrong to say, as has been said, that Calcutta is a creation of the British. The English merely "re-discovered" what was already a thriving settlement tucked away among the lush green of the Bengal delta. Rudyard Kipling, an assiduous protagonist of imperialistic ideas, was among the first to give currency to the fiction of Job Charnock's founding of the city of Calcutta and the following verse is testimony to this belief :

"Thus the mid-day halt of Charnock—
More's the pity
Grew a city.
As the fungus sprouts
Chaotic from its bed,
So it spread—
Chance-directed, chance-erected,
Laid and built
On the silt."

A number of quite unforeseen and fortuitous circumstances helped Calcutta to grow fast after the arrival of the English. One of these was the rebellion against tyrannous Muhammadan officers in Burdwan, Hooghly and other neighbouring districts. The English promptly petitioned the Mughal viceroy for permission to fortify their small settlement and a careless assent followed. This induced the English to start work on building the first Fort William (named after King William III) and thus strengthen their position.

The second fortunate circumstance was the purchase by the English of the zemindary rights of the three contiguous villages of Sutanuti, Kalikata and Govindapur from the inept and pleasure-loving Mughal viceroy in consideration of 1,000 gold mohurs



Fort William

which the English gave him as present. Thus for a sum, then equivalent to less than Rs. 10,000, the English acquired what proved subsequently to be the nucleus of the mightiest empire the world has ever seen.

There is no gainsaying that under British rule Calcutta prospered and fast developed into a flourishing community of people and later into a great imperial capital. Into this city, then as now the foremost in India, flocked men and women, great and small, from diverse lands; most of them, without doubt, came to shake the proverbial "Pagoda Tree" and earn an easy and comfortable competence while the going was good; others there were whose objectives were less mercenary in character. These were the men who strutted upon the stage of Calcutta's history and themselves created a large part of it before making their final bows and pass out into the land from which there is no return.

"This is the tomb of Rezabeebeh, the wife of the late charitable Sookias, who departed from this world to life eternal on the 21st day of Nakha 15, i.e., July 1630."

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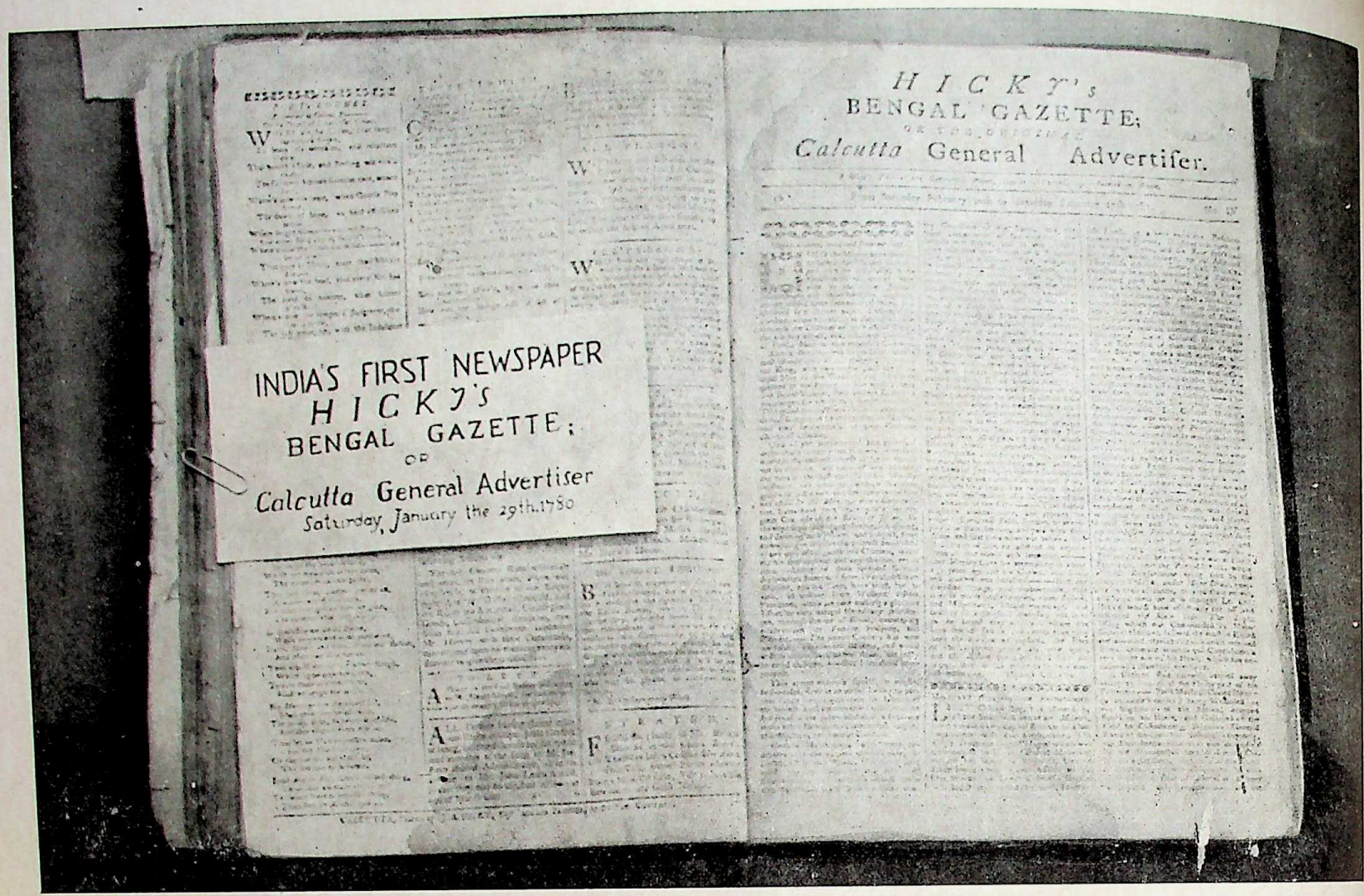

India's first newspaper—"Hicky's Bengal Gazette"

It is difficult to touch upon, in the space of a short magazine article, even briefly, all the various events and important figures that are part of this colourful, moving history. All that is attempted here is to highlight certain isolated and iridescent eminences that strike the curious as he wends his way on a brief sentimental journey.

It has aptly been said that Calcutta is a graveyard of memories—memories of great international figures like William Makepeace Thackeray (who was born in Calcutta on July 18, 1811), Macaulay (who lived for some time in the city), the elusive Junius (who was no other than the volatile Philip Francis), as later of Bankim Chatterji, Rabindranath Tagore (also born in Calcutta) and Sarat Chatterjee.

A sweet, but unfortunately tragic, link with the English literature is echoed in the immortal lines of the poet Walter Savage Landor condoling the death of his friend Lady Rose Aylmer who died in Calcutta on March 2, 1800, at the early age of 20. The news of her death prompted Landor to write what has been recognised as one of the finest in English verse:—

"Ah, what avails the sceptred race?
  Ah, what the form divine?
What every virtue, every grace?
  Rose Aylmer, all were thine.
Rose Aylmer, whom these wakeful eyes
  May weep, but never see,
A night of memories and of sighs
  I consecrate to thee."

These were the lines about which Charles Lamb said: "....Rose Aylmer has a charm I cannot explain. I lived upon it for weeks."

Calcutta can also proudly claim to have furnished, although indirectly, inspiration to another great English literary figure—Lord Byron, who, as a schoolboy, read "the interesting narrative of the shipwreck of *Juno*" written by William Mackay, a survivor, whose grave stands in the South Park Street cemetery. Lord Byron made copious use of this narrative while writing the stirring shipwreck scene in his *Don Juan*.

Calcutta, again, was the scene of perhaps the greatest "scandal" of the 18th century—a scandal which rocked two continents by its impact. This was the episode of the notorious Madame Grand, a Calcutta girl, who, passing through strange vicissitudes of fortune, emerged in her later life in the highest and noblest Parisian society as the wife of Prince Talleyrand, one of the greatest figures of the French Revolution.

Madame Grand (born Miss Noel Catherine Werlee) was married, when three months short of her 15th year, to George Francois Grand, a high official on the Calcutta establishment of the East India Company. Of her uncommon beauty, scores of admiring writers have tried but apparently been unable to describe adequately. A French biographer has described her as "rare et nonchalante beaute Indienne."

Another account pays tribute to her as "the most beautiful woman in Calcutta. She was tall, most

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elegantly formed, the stature of a nymph, a complexion of unequalled delicacy, and auburn hair of the most luxuriant profusion; fine blue eyes, with black eyelashes and brows, gave her countenance a most piquant singularity." It was not, therefore, surprising that such a rare creature should attract admirers.

Into the solitary mansion of this beautiful lady, on the night of December 8, 1778, while the husband was away keeping a dinner engagement, came a trespasser who was unceremoniously "caught....and secured" by the housemaster's servants. This trespasser was no other than the great Philip Francis, a member of the Supreme Council, a lifelong antagonist of Warren Hastings and one of the most powerful in contemporary English society.

The trespass and what was subsequently described in the Court proceedings as "criminal conversation with the plaintiff's wife" cost Philip Francis a sum of *sicca* Rs. 50,000 in damages plus costs. Madame Grand eventually cast her lot with the breaker of her home who established her at Hooghly. This liaison, however, did not last long and towards the end of 1780 we find Madame Grand leaving Hooghly for Europe on a Dutch ship.

Arriving in Paris, she found herself in the vortex of the French Revolution and escaped to London. Returning after the end of the holocaust, she easily charmed her way into the highest society in Paris where her outstanding beauty soon attracted the notice of Prince Talleyrand, the Foreign Minister, with whom she entered into an irregular friendship.

Wagging tongues, however, made her position difficult in the French capital and it is recorded that Napoleon Bonaparte himself forced his Foreign Minister to regularise the connection by a formal marriage which was solemnised on September 10, 1802. Madame Grand died, unsung, in Paris on December 10, 1835, and was buried in the cemetery of Mont Parnasse.

Writing of her 73 years later, Dr. H. E. Busteed said: Her "captivations were celebrated from the Ganges to the Seine; whose beauty—not when at its zenith, but when approaching its decline—was pre-eminent in a brilliant society remarkable for attractive women; and whose name was closely connected with those of actors conspicuous on the world's stage...."

Calcutta also witnessed the celebrated duel between Philip Francis and Warren Hastings, India's first Governor-General, following differences on a matter of public policy. The two men met at a secluded spot at Alipur in Calcutta on the early morning of August 17, 1780. Francis was seriously injured by pistol shot, but survived and recovered soon.

Then, sliding back a little from our narrative, there was that memorable battle for Calcutta during the summer days of June 1756 when the city fell before the superior forces of Siraj-ud-Daula. The subsequent sack of the English settlement by Siraj's troops gave rise to the insidious (but now happily exploded) story of the so-called Black Hole—an incident which designing brains distorted and magnified out of all proportions in

Princess Talleyrand (Madame Grand)

order to cast a deliberate slur upon the Indian character.

It is not perhaps generally known that India's first newspaper—*the Bengal Gazette* or *the Calcutta General Advertiser*—came out from Calcutta under the editorship of the tempestuous and star-crossed James Augustus Hicky. Describing itself as "A weekly political and commercial paper open to all parties, but influenced by none," the first issue of this two-sheet journal came out on Saturday, January 29, 1780. After an initial period of felicity, *the Bengal Gazette* quickly degenerated and indulged in reckless personal diatribes against influential persons in society and Government. This ultimately brought about its ruin and *the Bengal Gazette* died a rather premature and violent death.

The rapid growth of the settlement attracted many artists and painters of reputation to Calcutta. Among them was the German-born Johann Zoffany, the first Royal Academician to visit India. Zoffany painted and persented in 1787, the fine alter-piece of "The Last Supper" to the St. John's Church in Calcutta. Other portrait painters of repute to visit and work in Calcutta were Tilly Kettle, George Chinnery, not to peak of the famous Daniells, Thomas and William, whose aquatints of the Indian scene, and especially of street views of Old Calcutta are among the choicest of collectors' items.

India's first sea-worthy steam vessel was built and

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launched in Calcutta in 1823. This was the 89-ton steamer *Diana* whose "prodigious feat" caused considerable sensation in the contemporary Indian Press. The first steam vessel ever to arrive in India, the 500-ton *Enterprise,* berthed at the Calcutta docks on December 9, 1825, after a voyage of 145 days and won a prize of Rs. 100,000 from Calcutta's merchants for this pioneering voyage.

Calcutta also holds the doubtful distinction of fitting out and launching from her docks a privateering ship *Death or Glory.* The expedition, it is curious to record, was backed by official support, and returned to Calcutta on May 25, 1782, after a nine-month cruise on the high seas.

Coming to the field of science, Calcutta was among one of the first cities of the world to experiment with balloons. On the evening of July 29, 1785, a balloon filled with rarefied air was released from the Esplanade by a Mr Wintle, reaching a height of a quarter of a mile. This was within two years of the invention and demonstration of the world's first airworthy balloon by the Montgolfier brothers in France in June 1783.

Mention must also, in this connection, be made of the far-famed Asiatic Society of Calcutta, the first of its kind in the world, which was founded by Sir William Jones in 1774 and of the Botanical Gardens at nearby Sibpore, which is reckoned as second only in importance to the famous Kew Gardens of England.

This, then, in very rapid and sketchy outlines, is the portrait of a great city, the greatest without doubt in India and one of the greatest in the world. Much pain and disappointment have gone into its making, peoples of diverse interests and origins have contributed to its growth.

It is still growing, conscious always of its glorious, fighting past, and deeply sensible of the broad liberality and of the enlightened catholicity of its culture, a culture which produced some of the noblest sons of our motherland.

Over this city, cradle and graveyard of princes and merchants, hangs a mist of scented centuries-old dust of history. Calcutta is, indeed, as Dr. Walter K. Firminger, once beautifully said, "a city of sunshine, a city of palaces, a city of incalculable commerce, a city of wide empire, of stimulating friendship and social mirth, but also a city of heroic disappointments, of parted friendships and of griefs which abide."

Per ardua stabilis esto: there could hardly be a more fitting motto and moral to the story of Calcutta.

☆

The University of Calcutta

S. Dutt

A CENTURY'S march of events has taken in its stride so many revolutionary changes in our history that India a hundred years ago,—India under the East India Company—seems almost another world from free India of today. There are yet a few links that remain and one of them is the trio of Indian universities,—Calcutta, Bombay and Madras—which date from the last year of "John Company's" rule in India.

The oldest of them in point of time is the University of Calcutta; its Act of Incorporation going back to January 1857.

The foundation of these three universities marked the culmination of an educational policy, which, tentatively pursued for a decade or so, became settled only after an historic controversy during the 1830's and 1840's over the question as to what the main contents of education in India should be.

The two parties to the controversy were the "Orientalists" who advocated the claim of Sanskrit and Arabic, and the "Occidentalists" who stood for western learning through the medium of English. Victory in the controversy was almost assured in advance for the latter in whose ranks were stout champions like Macaulay and Raja Ram Mohan Roy.

Its last echoes, however, had long died away when in 1854 the Company's Court of Directors in London, acting on a famous despatch by Sir John Wood, sent a directive to the Governor-General of India to proceed to the establishment of three universities at the three "presidency towns" of Calcutta, Bombay and Madras.

The model taken for them was the University of London, as it then was,—a purely "examining body" with no constituent colleges which were a little later in coming into existence. Its form, constitution and regulations were adopted *ad hoc* for the Indian universities, the purpose of which was defined to be (Act II of 1854) "to ascertain by means of examination the persons who have acquired proficiency in different branches of Literature, Science and Art, and to reward them with academic degrees".

Shortly after this the University of London itself changed its character from an "examining" to a "cons-

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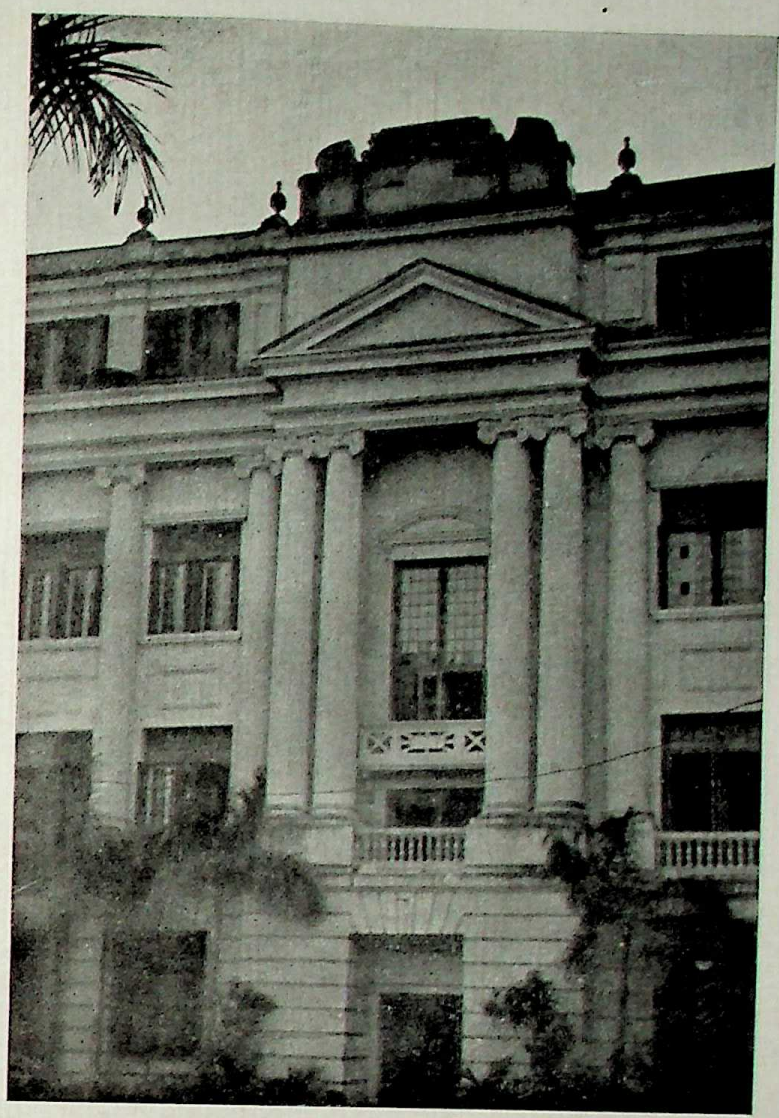
titutive and teaching" university, but for half a century following its Indian counterparts remained forlornly true to their original model.

Their educational jurisdiction, not territorially circumscribed at the beginning, was gradually whittled down in the subsequent decades by the establishment under different statutes and acts of incorporation of a number of regional universities like those of the Punjab and Allahabad.

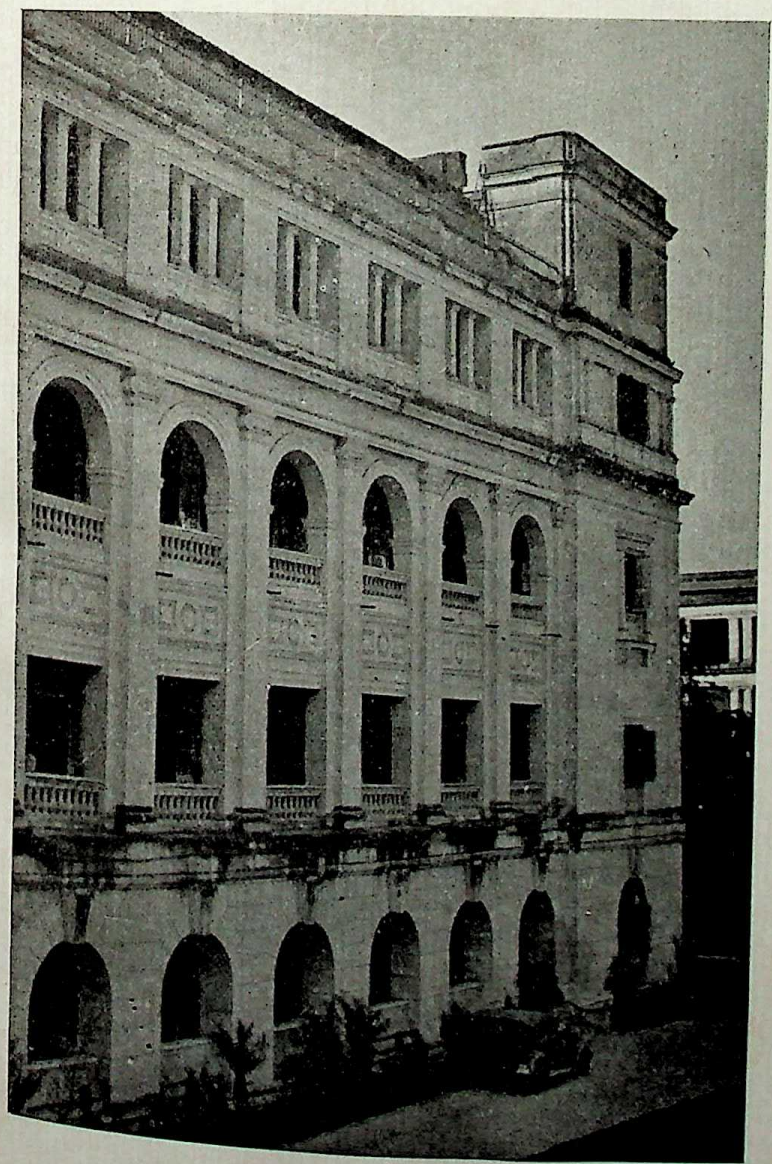
The University of Calcutta, which used to enjoy the widest jurisdiction among them, embracing almost the whole of northern and eastern India, from the Punjab in the west to Rangoon (then in British Burma) in the east, came in this way to be pre-eminently the "Alma Mater of Bengal".

Among the survivors of its old generation of *alumni,* are some who are now prominent all-India figures,—the most outstanding of them being the President of the Indian Republic, Dr Rajendra Prasad. He came from the neighbouring province of Bihar and went through a distinguished academic career in the University of Calcutta, taking his Bachelor's degree in 1906 with First Class Triple Honours in English, History and Philosophy, and his Master's next year, standing First in Class I. In 1952 his connection with the



The Convocation Hall

The Darbhanga Building



University of Calcutta was commemorated by putting up a marble tablet in the students' hostel where he was in residence as a college student in Calcutta.

Till 1904 the function of the University in respect of the institutions where actual teaching work was carried on,—the schools and the colleges,—was simply that of "affiliation",—the University confining itself to its main statutory function of examining the candidates for certificates and degrees sent up by these "affiliated" institutions.

These institutions multiplied from year to year: the total enrolment in the colleges went up from 3,827 in 1882 to 8,150 in 1902, a couple of years after which the University was launched on a process of reconstruction under Act VIII of 1904. After the period of reconstruction under (Sir) Asutosh Mookerjee's first eight years of Vice-Chancellorship (1906-1914), the number of college students took a sudden leap to 28,618 in 1917.

There has been steady increase since in collegiate enrolment, coming up to the highest among all Indian universities in 1946-47 (Bombay coming next) with 45,008 students and showing little diminution in number after the partition of Bengal in 1947 and relegation of East Bengal to Pakistan. This enormous and unwieldy number over which the University had to exercise jurisdiction, is its worst headache today.

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A section of the University library

The reconstruction of the University was initiated under the viceroyalty of Lord Curzon with the passing of an Act in 1904 which sought at one sweeping stroke to convert the Indian universities from merely examining bodies to teaching and residential institutions.

It empowered the universities under Section 3 "to make provision for the instruction of students; to appoint University Professors and University Lecturers; to hold and manage education-endowments; to erect, equip and maintain University Libraries, Laboratories and Museums; to make regulations relating to the residence and conduct of students; and do all acts..... which tend to the promotion of study and research."

The man whom Lord Curzon selected to shoulder this gigantic task of reconstruction for the University of Calcutta was (Sir) Asutosh Mookerjee who was named Vice-Chancellor in 1906. No happier selection could possibly have been made. For a long time, as Lord Lytton, Chancellor of the University and Governor of Bengal, with whom Asutosh Mookerjee was not always a *persona grata,* remarked in one of his Convocation Addresses, the names "Asutosh" and "Calcutta University" were interchangeable to the Bengali mind.

This master-architect of the Calcutta University was himself one of its most distinguished *alumni.* A famous lawyer in his after career and elevated to the High Court bench at the time of his nomination as Vice-Chancellor, he was a man of indefatigable energy and immense organising and driving power. He built up the University completely as the Act envisaged and raised it to a high prestige in the educational world of India. His ambition was to lift it still higher to an international fame.

His first notable achievement was the foundation in 1914 of a Post-Graduate Department in the University, embracing the Humanities, Law and Science, and he associated with it in teaching capacities some scholars of the highest reputation, both Indian and foreign. "Promising scholars from all parts of India", says the Report of the University Education Commission (1948-49), presided over by Dr Radhakrishnan, "were appointed to professorial chairs, and in a few years Calcutta produced research work of a high quality, both in the Humanities and the Sciences, and several of the professors won international recognition."

Among them were philosopher Radhakrishnan himself and scientist and Nobel Prize winner, C. V. Raman, whose names were not so well-known when Asutosh discovered their potentialities and appointed them in the Post-Graduate Department. Their association with it was in fact the corner-stone of their brilliant international after-fame.

In the day-to-day work of the University, Asutosh proved himself to be a veritable dynamo;—he energised every department and every detail of the administration. Of squat and heavy build, with a square-cut face and pirecing eyes, and distinguished by a heavy

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moustache (of the type called "soup-strainer") which his cartoonists invariably seized upon, his appearance regularly every afternoon in the university buildings, straight from the day's work on the High Court bench, was the signal for a fresh spurt of activity. Nor would he himself leave the buildings till it struck nine at night, and he worked, it is said, on the files, carried home everyday, past midnight.

The University of Calcutta since its infant days has been the happy recipient of benefactions from the public: one of the earliest being that of Roychand Premchand, the "cotton king" of Bombay during the 1860's, whose munificent endowment was utilized by the University to found a prize of Rs. 10,000, on the result of an annual competitive examination, for the year's best scholar. For many years it was the University's "Blue Ribbon", which Asutosh himself won in his youth, until it was converted later into several prizes for research work in Art and Science subjects.

During Asutosh's Vice-Chancellorship, there was a shower of benefactions, of which the most munificent were Rs. 250,000 by the Maharaja of Durbhanga (in Bihar), funded to build the mansion named after him "Durbhanga Buildings" where the University's offices are located, Rs. 1.5 million by T. Palit and Rs. one million by Rash Vihari Ghose, both front-rank lawyers of the Calcutta High Court, which enabled the University to build up its science side.

The number of less illustrious donors was almost legion: their names or those of their nominees are associated with several university chairs, lecturerships, scholarships, and prizes, and, in fact, during Asutosh's Vice-Chancellorship, the usual mode of perpetuating the memory of a deceased parent, wife or relative in Bengal was to make a gift to the University to found a scholarship or a prize in the deceased's name.

Besides building up the University of Calcutta as a great "teaching university" in terms of the Act of 1904, there were two objects ever-present to Asutosh's mind,—complete academic freedom for the University and the cause of "Advancement of Learning", which was taken as the university motto.

He resented all attempts at encroachment on the University's autonomy by the education officers of the Government. His stout stand for academic freedom, which brought him from time to time into conflict with the Government of Bengal, earned for him the *sobriquey* of the "Bengal Tiger".

Hard-pressed on one occasion to conform to certain official recommendations regarding university administration, he made a memorable fighting speech in the Senate, ending up with the peroration still remembered in Bengal: "Forget the Government of Bengal; forget the Government of India. Do your duty as senators of the University, Freedom first: Freedom second, and Freedom last."

But this fighter for freedom in the academic arena was also in the quietness of his own thoughts, a sincere devotee of research. He himself had done some research work in Higher Mathematics early in his career, but he found little time and leisure to follow it up later.

He was actively interested in every scholar of the University, young or old, engaged in research work of any kind, though his own preference was for ancient Indian history and culture, and, subordinately, the vernacular literature of his own province.

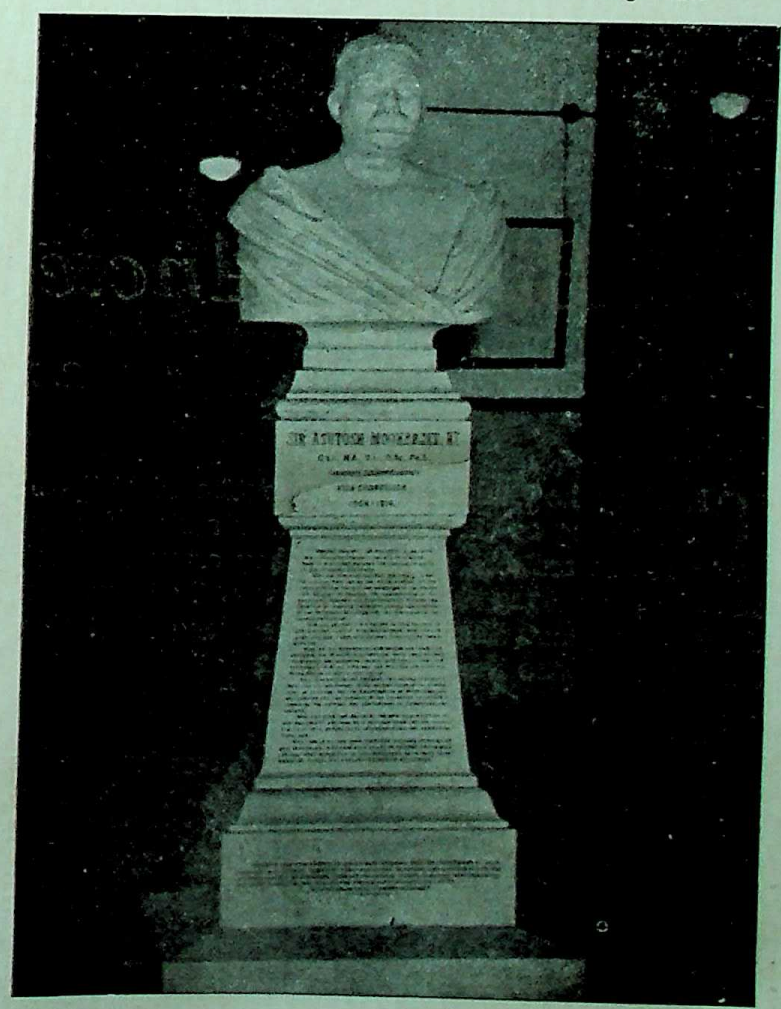
One of his claims on the gratitude of the Bengali people was the introduction of the Bengali language and literature into the University curricula right up to the M.A. standard. It is emblazoned on the pedestal of his marble bust on the landing of the Durbhanga Buildings, commemorating his achievement in installing the Mother Tongue in the "Stepmother's Hall".

But the University, even by reason of the developments brought about by Asutosh, had become much too unwieldy, and the felt necessity for a revision of its structure led to the appointment in 1916 of a Commission, presided over by Sir Michael Sadler,—Asutosh himself being included as a member. Its investigations, however, were not confined to the University of Calcutta, but fetched a much wider compass, embracing the whole field of education in northern India.

Its recommendations resulted in the institution of several unitary teaching and residential universities in Dacca (now the capital of Eastern Pakistan), Delhi, Lucknow, Allahabad, etc., but the Calcutta University itself remained almost wholly unaffected.

In fact, since 1923,—the year of Asutosh's final

Asutosh Mookerjee's bust in the University Hall



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retirement from the Vice-Chancellorship—it has remained stuck in its old groove, though suffering little diminution in its Post-Graduate teaching activities. The fact is referred to in the Report of the University Commission of 1948-49.

A clog on the progress of the University has been the excessive number of colleges and college students under its educational jurisdiction. It constitutes also its major problem today. It is a troublesome legacy from the past "twenties,—an uncomfortable aftermath of Asutosh's ten years' brilliant Vice-Chancellorship."

Some time early in that decade, Mahatma Gandhi made a tour of Bengal in connection with the Non-Co-operation Movement he was leading at the time and, in recording his impressions in his journal, described Bengal as "education-mad". It was Mahatma Gandhi's telling way of putting it that far too many were working in that province for university diplomas and degrees, and that the consequent "wastage" was bound to be appalling.

In the year 1925,—a normal university year in that decade,—the University turned out in round numbers as many as 14,000 Matriculates and 4,000 Bahcelors in the different faculties for whom there could hardly exist half that number of openings in private or public service within the province. The consequence was an abnormal overcrowding of the legal profession.

The "number" problem has been accentuated acutely since the transfer of East Bengal to Pakistan by the migration on a large scale of middle-class Hindus (called *Bhadralok* Class in Bengal). "Refugees", as they are popularly called, of this class have congregated mostly in Calcutta, adding to an already unwieldy collegiate student population which, on a rough estimate, stands today at the appalling figure of 45,000 in the city of Calcutta alone.

The result has been a mushroom growth of colleges, ill-equipped and with unsatisfactory teaching arrangements in "shifts", a general deterioration of teaching standards, deplorable conditions of student accommodation with lack of sufficient amenities for corporate or healthy academic life, and the disruption of the University's control or supervision over the colleges and their unmanagable overgrown number of students. This state of affairs has come to light through the recent investigations of the Students' Welfare Committee of the University.

Evidently the future progress of the University has to await the solution of this immediately urgent problem.

The Government of India passed a Calcutta University Act in 1951 for a fresh re-organisation of the University, laying particular stress in its preamble on "due control over the colleges", "the development of academic life and corporate unity in the colleges", "promoting co-operation among them so as to utilise to the full the teaching resources available and encouraging the co-ordination of resources for higher teaching and research at suitable centres in and outside Calcutta".

When the temporary troubles with which the University of Calcutta is so sorely beset at the present time are tided over and passed, it is expected that a new chapter, in keeping with its proud traditions of the past, will open in its history.

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Bihar—Ancient and Modern

R. R. Diwakar

THUS spake Buddha of the republic of Vrijjins: "So long as they meet in their assemblies and decide matters, so long as they carry out their decisions, so long as they honour their women, their elders, and their Chaityas, so long shall they endure, and none shall destroy them."

Bihar—Ancient

We have to haul ourselves back across twenty-five centuries to have a glimpse of ancient Bihar. Historians have fixed the dates in connection with the birth and death of Buddha (646 B.C. to 566 B.C.). It is round about these dates that the reliable history of Bihar begins.

Bihar is comparatively a modern name given to it on account of the innumerable Viharas—Buddhist Monasteries—that once studded this land of the Buddha. What is called Bihar State today (except Chhota Nagpur) consisted in those days roughly of Mithila, Anga and Magadha. The Ganga then as now cut across Bihar. Mithila and Anga were the northern and north-eastern portions, while Magadha spread on the south.

When reading the history of ancient Bihar it is necessary to remember that Nepal was then a part of India, and Tibet and Southern China were not as foreign and as far away as they seem to be now. The same was the case with Afghanistan and Iran. It should also be remembered that Pataliputra served not only as a commercial port but also as a place of cultural and other exchanges.

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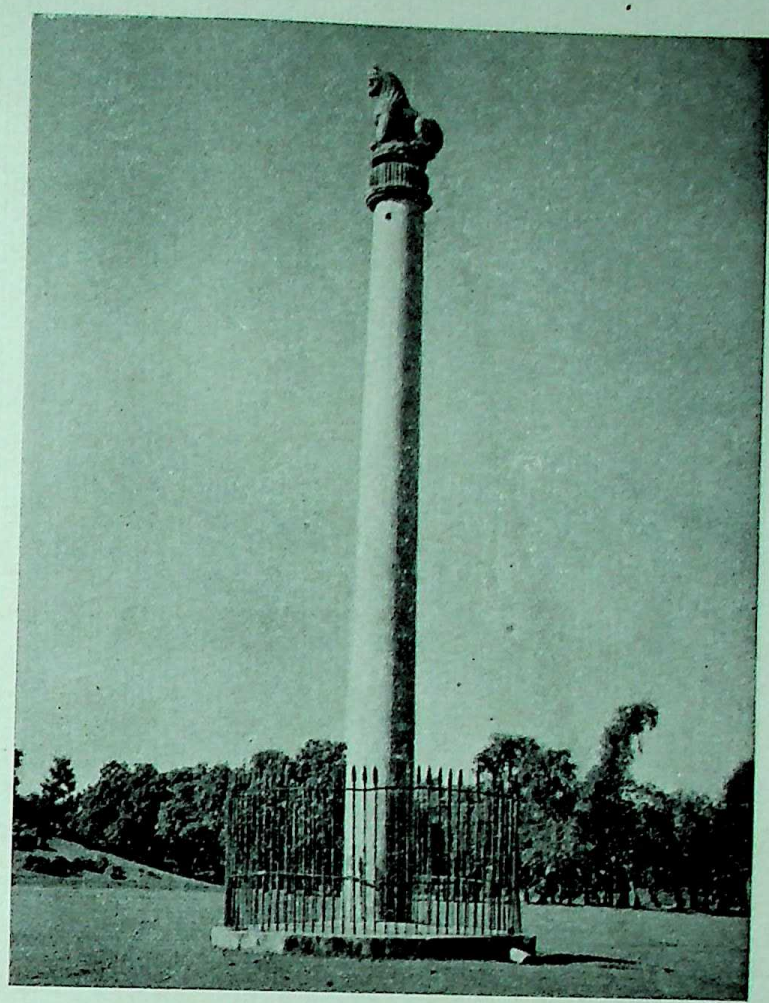
Ancient Bihar, the Bihar of Janaka, of Yajnyawalkya, of Gautam, of the Vrijjins, of the Nandas, the Mauryas, and the Guptas, is rich equally in cultural, social, and educational history. Every Indian is sure to feel enriched if he reads but a few pages of the history of Bihar from the 7th century B.C. to the 6th century A.D. Some of the chapters of this story are the most glorious ever in our history.

India is found to have had some very sound traditions of democracy since very early times. In Bihar, even before the birth of Buddha we find Gana-rajyas, that is, republics, functioning very efficiently and powerfully.

The Buddha himself came from the Sakya clan which conducted its affairs in a democratic way. During Buddha's lifetime the Vrijjins had a federation of eight republics with Vaishali as their federal capital. It was also the capital of the Lichhavis, the most powerful of the republics in the federation.

The Buddha loved Vaishali very much and admired the Lichhavis for their unity and strength. There were kingships and kingdoms also at that time. But the Lichhavis continued to be a factor to be counted with till about the third century A.D.

In fact, not knowing how to subdue the Lichhavis, Ajatshatru, king of Magadha, is said to have asked for advice from the Buddha. It is said that it was on that occasion that he uttered the words mentioned at the beginning of this article.



Asokan Pillar at Lauriyanandangarh (Champaran)

The Mahabodhi Temple at Bodh Gaya

But it was with the emergence of the Mauryan empire in Magadha under Chandragupta Maurya that the history of Bihar assumes all-India and World importance. By that time, with the defeat of Seleucus, the Greek governor at Syria, the Magadhan empire had extended to the furthest limit of India and closed on the borders of ancient Iran.

The Magadhan empire was already well-known when Alexander invaded India in 326 B.C. Young Chandragupta is said to have met and challenged Alexander. He ascended the throne in 321 B.C. after deposing and killing the Nandas. Under Chandragupta Maurya and Chanakya, his equally famous minister and author of Arthashastra, the name and fame of the Mauryan empire spread far and wide.

Famous Asoka, his grandson, ascended the throne in 273 B.C. and reigned for about 35 years. He is known for his beneficent rule, saintly character, and his edicts scattered all over his empire are at once standing monuments of his religious spirit, worldly wisdom, and administrative shrewdness. He passed away in 232 B.C. and the Mauryan rule gave place to the Sunga kings.

After a lapse of about five centuries the great and glorious Gupta period began in 320 A.D., when Chandragupta I came to the throne. This was a golden age when literature, arts, and science flourished. These were the landmarks in the ancient history of Bihar.

As glorious, however, were the achievements in Bihar in the field of religion, philosophy, thought, arts

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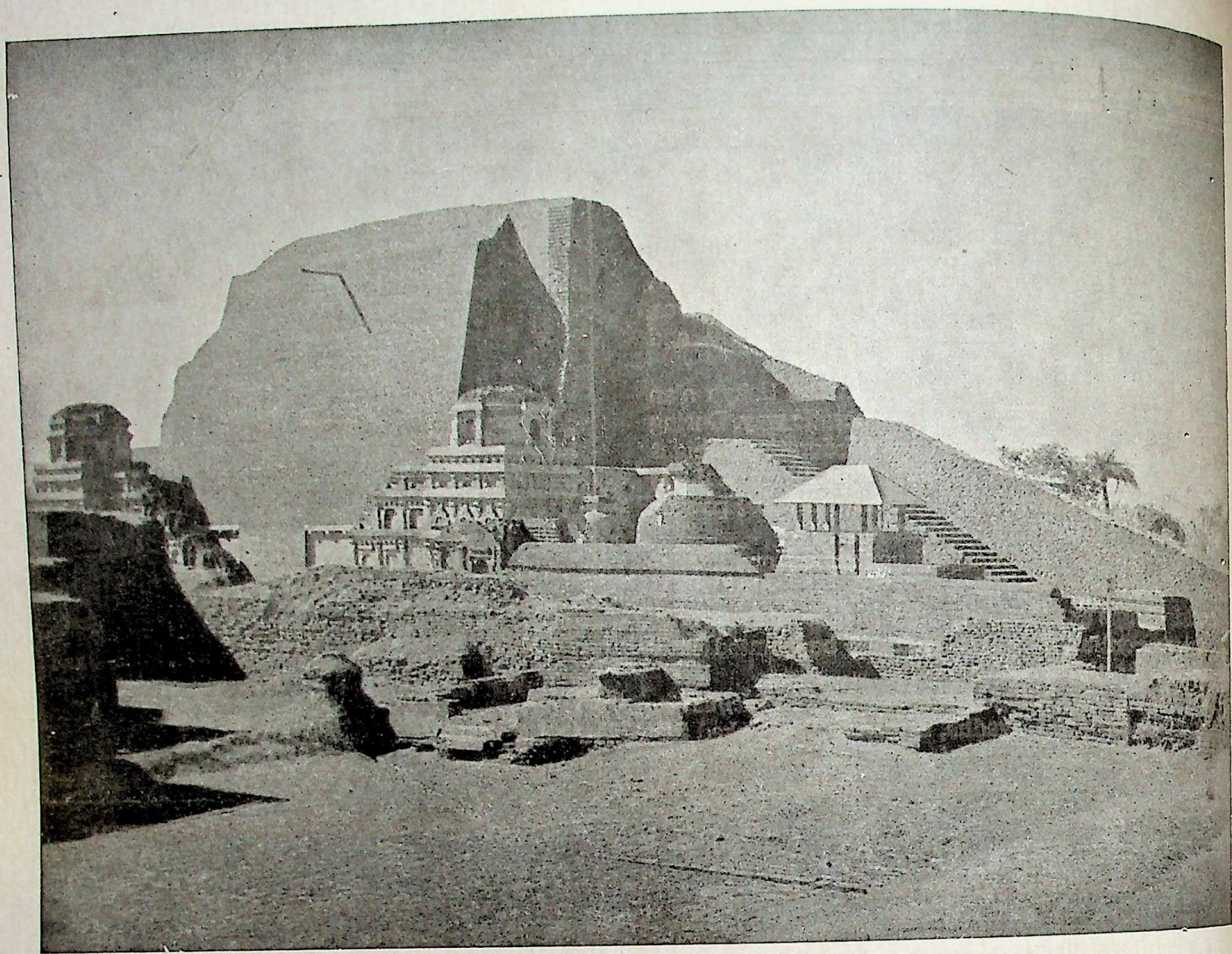

The main Stupa at Nalanda

and culture. The names of Janaka and Yajnyawalkya go back to the Upanishadic period. Gautam, the author of Nyaya Shastra, Kapila the founder of Sankya, and Mandan Mishra who later became known as Sureshwaracharya and a host of others, came from Mithila. The tradition of Sanskrit learning is even now kept up, and there are hundreds of pathashalas still running.

Vaishali was the birth-place of Mahavir and Jainism. The Buddha was born in the Lumbini gardens in the Nepal Tarai, but his *Tapas,* enlightenment, preaching and *Nirwana* were attained in Mithila, Magadha, and only partly in Uttar Pradesh. Vaishali, Gaya, Rajgriha and Pataliputra are the places which he sanctified by his stay and preaching.

He spent his best days in Bihar and his gospel spread from here in all parts of India and the world. It was here that the great universities of Nalanda and Vikramshila flourished. It was here that Vasubandhu and other great Buddhist preachers and scholars went to Tibet and China and for six hundred years or more kept up the link with those countries.

As a result of religious and philosophical activities, dissertations and discussions, and a rich social life, literature both religious and secular, in Sanskrit, Pali and Prakrit, developed on a large scale.

Not much of architecture remains except the cyclopean walls of Rajgriha, the Barabar caves, the Nalanda ruins, and so on. But as a result of excavations, the Darbar Hall of Chandragupta Maurya and its remains have come to light. The typical Mauryan polish is found on number of sculpture pieces, most notable of them being the Yakshi standing eight feet high.

Thus ancient Bihar contributes very richly to the early history of India, and the very valuable records of Magasthenes, Fa-Hien, and Hiuen Tsang stand witness to its ancient glory.

Bihar—Modern

In this very brief review, it is not possible even to mention some events and names of the intermediate period from the eighth to the nineteenth century. After mention of one or two events since 1857, the year of India's first war of independence, I shall come to the post-independence era, that is, 1947-54.

The name of Kuwar Singh deserves prominent mention in connection with the rising of 1857 since he was the person in Bihar who planned a regular revolt and fought very bravely against all odds in 1857-58. The rising of the Mundas of Chhota Nagpur

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1895 under Birsa Bhagwan is also worth noting. He roused his people by religious fervour and they looked upon him as their prophet.

As a result of administrative reorganisation, Bihar was separated from Bengal and made into a province in 1912. Since then its fortunes have run as a separate state.

It is notable that Gandhiji chose to come to Champaran in 1917 and take up the cause of the peasants who cultivated indigo. It is now well-known how Gandhiji used here his new weapon of Satyagraha, and that too successfully, for the first time in India's history after his return from South Africa. This marked a new era of awakening in Bihar and since then it has marched ahead consistently, inspired by Gandhian ideology.

While the past of Bihar is very important from the point of view of archaeologists and historians, sociologists and anthropologists, scholars and thinkers, its present and future are far more important to its millions of inhabitants. Obviously it is possible to cover here only a few of the special features of this State.

Bihar is now the second biggest State of the Union with a population of 40.225 millions and an area of 69,348 square miles. It is one of the richest in mineral wealth, the important minerals being iron, manganese, coal, copper, asbestos, bauxite, pyrites, mica, limestone, varieties of clay and quartz, beryll, etc.

But Bihar is still predominantly agricultural. Seventy-eight per cent of its population lives on agriculture and 87 per cent of it lives in villages of less than five thousand. While rice, wheat, corn, millets and pulses are the main food-crops, sugar-cane, jute, tobacco and chillies are the chief money-crops.

Five Year Plan and Community Projects

As in other States, Bihar has a five year plan involving an expenditure of about Rs. 580 million by the end of 1956. The State may be said to have kept pace fairly with the programme though some readjustments may be necessary. It had spent Rs. 361.5 million by 1953-54. In all, the Bihar plan consists of 190 schemes and the progress has been satisfactory especially in the field of communication and power.

The most interesting as well as that which aroused local enthusiasm and calls for constructive self-help from the areas is the community project schemes. The actual work started on the October 2, 1952, and the integration of the national extension service with the projects was finalised in April 1952. By the end of 1956 one-fourth of the entire rural area is sought to be covered by the national extension service.

Up to the end of March 1954, the contribution by the local people could be estimated at Rs. 3.1 million. In terms of work done, we can say that 919 miles of kachha roads with 364 culverts were constructed; 104 new basic schools were started and 78 old schools were converted into basic ones and about 700 acres of land was donated by the villagers. Four hundred libraries have been opened.

In the field of agriculture 5,407 tons of fertilisers have been sold and 55,578 compost pits made. Similar work in seed-distribution, planting of 70,000 fuel trees, fish-fry distribution to the tune of about a million, has been carried on. Vigorous work in public health, medical relief, sanitation, cottage industries, has been done in the chosen areas.

More inspiring and heartening than these achievements in dry figures is the sight of masses of villagers putting their hands to every kind of developmental work and their eager participation in thinking, planning, and executing the works necessary for their welfare. It is in that that the future hope of development of rural India lies. For it is then only that the spark may be said to have kindled the fire of aspiration, faith and hope.

The land problem assumes a special significance in predominantly agricultural and rural Bihar where the zamindari system had been in vogue for a century or more. The big estates have, however, been already taken over by the Government under a special act abolishing zamindari. In the budget for 1954-55 a provision of Rs. 5 million has been made for paying interim compensation to zamindars.

The next problem is of fixing a ceiling for agricultural holdings. A decision has been taken in this regard but a law has yet to be enacted. Consolidation of holdings is another important problem. Every step in the matter of land reform has to keep in mind both maintenance and increase in production, as well as the satisfaction of the needs of social justice.

Adivasi women of Ranchi

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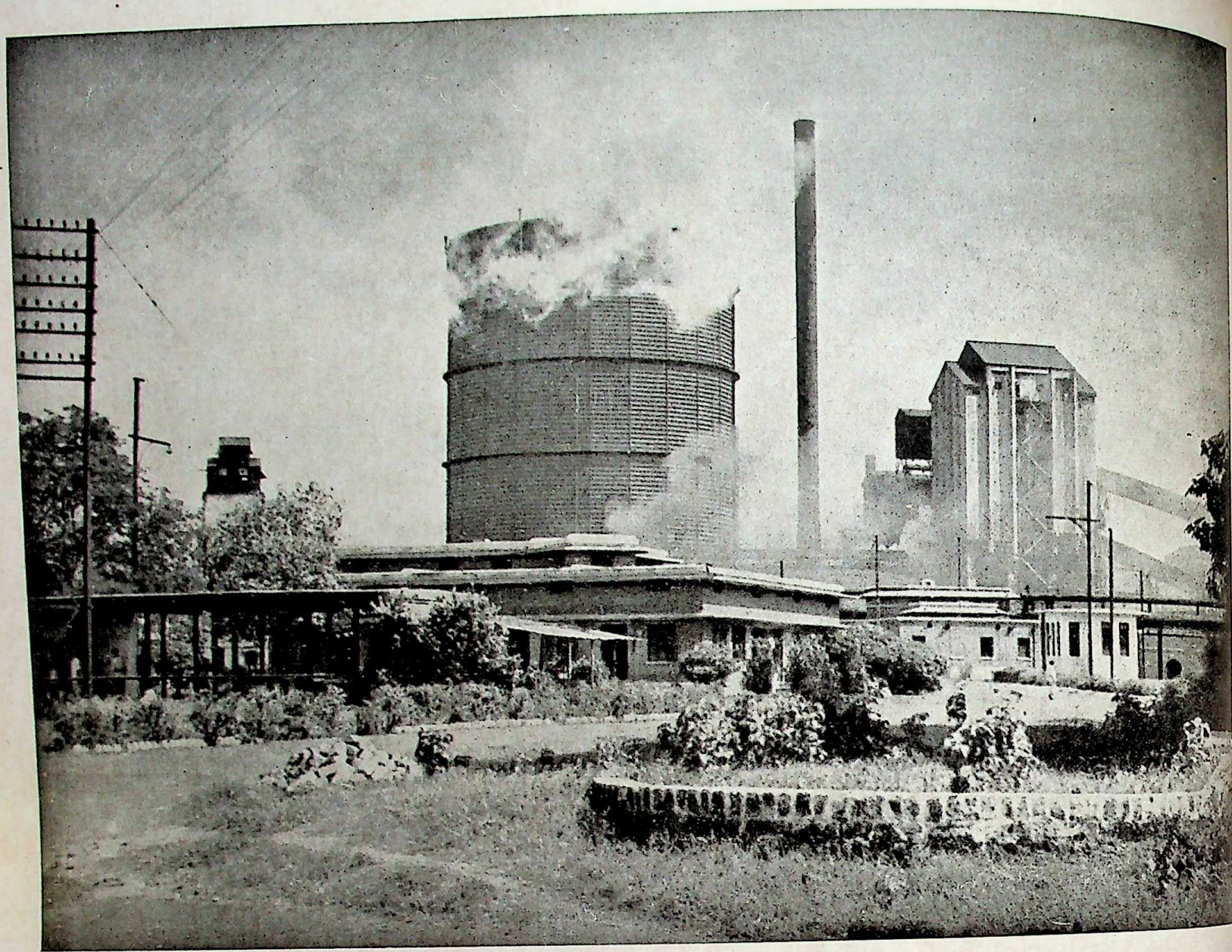

A view of the Tata Factory, Jamshedpur

The Bhoodan Movement of Shri Vinobaji has helped this cause a great deal during the last three years. The total acreage collected in India is about 3.6 millions, while Bihar alone has contributed 2.3 million acres, thanks to Sri Vinobaji's immense influence on the masses, the faith of Bihar in Gandhian ideals, and the large number of rural workers that this State can marshal for any just and noble cause.

This movement has created a strong awareness among the people and a psychology favourable to land distribution on an equitable basis. Special legislation has been resorted to for facilitating transfer and distribution of land collected as Bhoodan.

As the Ganga flows right through Bihar, it divides the State into North and South Bihar. There is no bridge to connect the two parts. Thus the economy of both the parts suffers heavily on account of transport difficulties. It has now been decided to have a railroad bridge at Mokameh, 56 miles down the river from Patna, at the estimated cost of Rs. 1.6 million. The work is already under way.

Among other major schemes which have already been progressing is the Damodar Valley Project. The dam at Tilaiya was completed last year, creating a vast lake of 24 square miles. A total of six thousand kilowatts of electricity would be generated there and the waters would be utilised for irrigation mostly in West Bengal area.

The Maithon dam also will be ready by March next, when about 36 square miles of water would be impounded and electricity generated. Down below the Konar dam and the Panchet Hill dam have been taken up. The Bokaro thermal plant has already started generating 100,000 kilowatts of electricity as a part of the D.V.C. scheme. Thus, this multi-purpose scheme on the pattern of the famous Tennessee Valley Scheme in the U.S.A. is being completed. This is the biggest scheme of its kind in the whole of Asia.

The Kosi Project has already been sanctioned and a special Board has been set up to carry it out at an estimated cost of Rs. 375 million.

In North Bihar the sugar industry is the biggest. The production is next only to that of Uttar Pradesh which stands first in India. Over 400,000 cane growers and about ten thousand workers depend upon this industry. Research in the manufacture of sugar also is carried on by a special institute.

South Bihar, especially Chhota Nagpur, is the home of many big industries, including iron and steel, coal, copper, aluminium, mica, cement and lac. Chhota

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Nagpur is rich in minerals and the percentage of metal in different ores is found to be very high. Jamshedpur, the steel city with its industry and a population of about 200,000, is a marvel of modern industrial development and organisation. Dhanbad and Jharia are the centres of coal industry.

Bihar produces about eighty per cent of mica in India, which is of the finest quality in the world. It is called ruby mica. It is a strategic material and in great demand at times. It is a good dollar earner. India exported mica worth Rs. 83.8 million in 1953. About 26,000 workers are engaged in this industry in Bihar.

Shellac is grown on specific trees such as Kusum, Ber and Palash. Bihar produces about 70 per cent of the shellac in India and most of it is exported. The Lac Research Institute at Ranchi works on the problems of this industry. The production and collection of lac is a cottage industry and is a subsidiary occupation for thousands of villagers. Marketing is done after a simple processing which is carried on by small and big factories.

The Sindri Fertilizer Factory, the biggest in Asia, is the pride not only of Bihar but of India. It is now producing about 950 tons of chemical fertilisers per day. Near about, a cement factory and a superphosphate factory are springing up.

Manufacture of cigarettes, confectionary, paper and boards is carried on on a somewhat big scale in different places.

Among cottage industries, the pride of place goes to handloom weaving, both cotton and silk. Bihar has been well-known for the last quarter of a century for certain varieties of fine khadi. It was a lady from Darbhanga that won the prize this year in fine-spinning. She spun 96 yards of yarn of 350 counts in one hour! This reminds us of Dacca muslin. Different varieties of silk are produced on cottage industry basis. The State is promoting cottage industries through subsidies and by giving proper training and loans.

Adivasis

The Adivasis, consisting mainly of Mundas, Santhals, Hos, Oraons, Paharias, Kharias and others, are comparatively numerous in Bihar. They are the children of nature and are an extremely lovable lot. Their population is 4.5 millions, i.e., 10.5 per cent of the population of the State. They are mostly con-

A bullock cart laboriously proceeds on a flooded village road in Muzaffarpur district

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centrated in the Chhota Nagpur division and the district of Santhal Parganas.

With the addition of scheduled castes and backward classes the total percentage of backwards in Bihar comes to 38.2. Since 1946, the State has constituted a separate Welfare Department with a minister in charge. The Constitutional provision in the chapter on Directive Principles, "to protect them from social injustice and all forms of exploitation" is the main guiding principle.

A Tribal Research Institute has also been started since last year in order to study the cultural and other problems of the Adivasis. The main lines of welfare work consist in educational facilities by way of stipends and scholarships, construction of hostels and increase in the number of schools, irrigation facilities, establishment of grain-golas, sinking of wells, medical facilities, loans and grants for the promotion of village industries. The expenditure incurred during 1953-54 on the welfare of scheduled tribes alone was Rs. 1,967,413.

The Bihar State is advancing fast in the matter of creating initiative in the villages so that the welfare state of our dreams may soon become a reality. The Bihar Panchayat Raj Act was enacted in 1948 and by the end of March 1954, 4,387 notified and 2,000 unofficial Panchayats were working in the state covering about one-third of the population.

Maintenance of peace through Gram-Rakshaks, administration of justice in specific cases, construction of minor irrigation works, planting of trees, creating intensive cultivation belts, providing education facilities, setting up village industries, planning and carrying out local works, water supply, public health measures are some of the important activities allotted to the panchayats. Free voluntary labour called *shramdan* is secured and organised by a labour-tax. Some figures will be found interesting.

In 1952-53, the total number of cases filed in all the districts was 19,837 but 12,685 were compounded and compromised. The number of civil suits filed during the same period was 8,475 but it was possible to reach a compromise in 4,787 cases. The number of officers and men enrolled in the Village Volunteer Force was 3,375 and 29,781 respectively.

Bihar State is one of those which took to Basic education with faith, and it may be said that it has made progress in that line as few others. Institutions such as those at Turki bear witness to the real potentialities of that system. Educationists, experts, and various commissions on education have expressed their admiration at the results.

It is needless to say that education has progressed fast. In 1948, the provision made in the budget for education was Rs. 12.5 million; today it is Rs. 70 million, that is, 20 per cent of the total budget.

A new step has been taken in opening a public school on the pattern of public schools in Dehra Dun and other places. The new school has been opened at Netarhat (height 3,500 feet) in Chhota Nagpur.

Bihar being the home of Sanskrit learning, the birth-place of Mahavir, and the province of the Avatara-Karya of Buddha, it was but natural that the State should initiate special institutions for the study and research of these great schools of thought and learning. With this view, the Mithila Sanskrit Research Institute has been founded at Darbhanga with the kind help and endowment of the Maharajadhiraj there.

A special attempt is being made to integrate the traditional methods of learning with those of modern scholarship and research. Similarly at Nalanda, a Research Institute for Pali and Buddhism has been functioning for the last two years and has attracted scholars from Ceylon, Burma, Thailand, Tibet, China and Japan. A new Vihar has been built at a cost of about Rs. 200,000 for accommodating the Institute. Along these very lines an institute to carry on records in Prakrit, Jainology and Ahimsa is being founded at Vaishali, the birth-place of Mahavir.

A co-ordination committee has been constituted to see that the work of these three institutions is carried on on the basis of co-operation and mutual benefit.

To speak of Bihar without its floods, especially with Kosi in floods every year and the unprecedented floods this monsoon, would be like speaking of Rajasthan without its desert. With the coming into being of the Damodar Valley Corporation the flood-problem in South Bihar has gone somewhat into the background because the Damodar was the most turbulent of the rivers.

North Bihar, however, may be characterised as the land of floods, for every river coming down from the Himalayas to meet the Ganga is likely to be flooded. All these rivers flow in depressions rather than in well-defined valleys and channels. This, therefore, results in shifting of courses and floods.

Doubtless, the Kosi is the most turbulent as well as the most dangerous of the rivers. It is the biggest since its water basin is only next to that of the Brahmaputra in north-east India. The strong currents of the Kosi play havoc with the surrounding areas and leave behind sand instead of silt. It has now been decided to have a barrage at Hanumannagar with canals on both sides and two lengthy embankments on both the banks. This will cost about Rs. 370 million.

To harness other rivers, two flood commissions to deal with the Ganga and the Brahmaputra river systems, a Central Flood Control Board with separate State Control Boards for the rivers in the respective States, have already been constituted and the work of planning is going on. The proposal to enlist voluntary as well as paid local labour on a mass scale is being investigated. Work on some of the schemes is likely to begin during the winter.

Here in this brief article, I have attempted to give a glimpse of ancient Bihar and a running account of some of the salient features and activities of post-independence Bihar. I am conscious that the picture is too much of a mere outline. The writer, however, will feel amply repaid if the curiosity of the reader is aroused for knowing more of Bihar.

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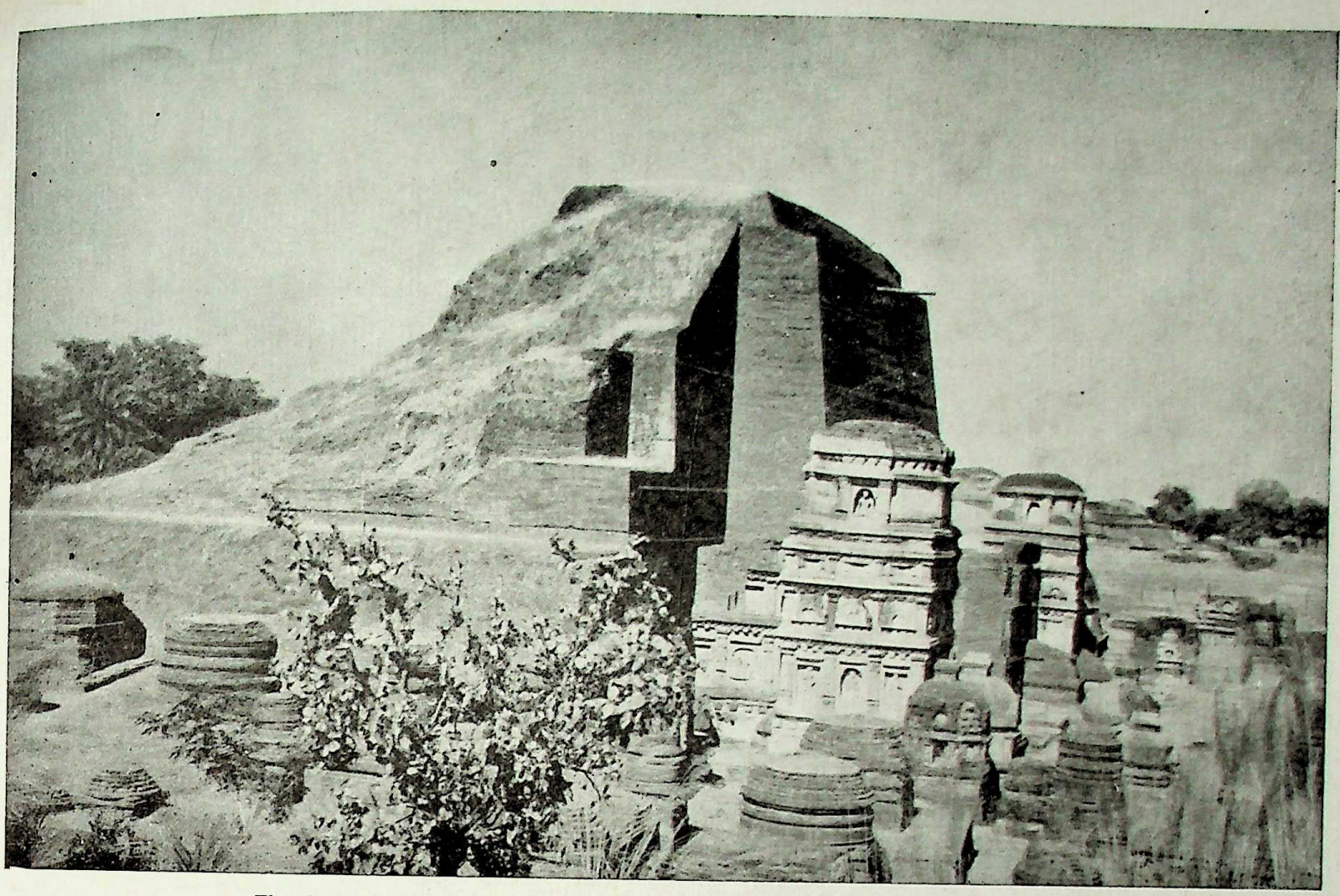

The Great Stupa of Nalanda—the central meeting place of the University town

Nalanda: The Oldest University of India

Adris Banerji

THE ruins of Nalanda lie at a distance of fifty-five miles from Patna—the capital of Bihar State, and seven miles north of Rajgir. It is reached either by Bihar-Bakhtyarpur Railway from Bakhtyarpur Station or by motor transport from Patna.

Though the antiquity of the place is not so great as Taxila or Sarnath, it contains the ruins of one of the most renowned Universities of the world—the Oxford or Heidelburg of the ancient East. Gautama, the seventh Buddha knew the villages of Nala and Nalanda as hamlets of mud of wattle huts. After *mahaparinibbana* its condition does not seem to have improved; so that Fa-hien in c. 5th century A.D., described it as a village consisting of few miserable mud hovels. But somewhere between c. 400 to 600 A.D. it had found fame, and its diplomas authenticated by its seal were sought for certificates in the contemporary Buddhist world. That Buddhist world was not small—it extended from Korea to Comorin and the coast of Arabian Sea to China Sea.

To find an answer to this riddle—this sudden rise to an all Asian reputation we have to fall back on political conditions. The 5th century of the Christian era saw the release of certain dammed up forces in Asia and Europe which shook the ancient world to its very foundations. These were the Hunas. Fa-Hien's testimony establishes that Buddhist monastic establishments in Bactria, Kabul, Bamiyan, Jalalabad, Swat, Gandhara with its capital Taxila were in a flourishing condition. But by the seventh century of the Christian era they were lying in ruins and desolation. The charred remains of Sir-Sukh and hundreds of monasteries and Stupas, on every hill top, glen, and sides, bear eloquent testimony. The very name

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Taxila went out of use. A cataclysm whose real import and magnitude has never dawned upon the historical investigators.

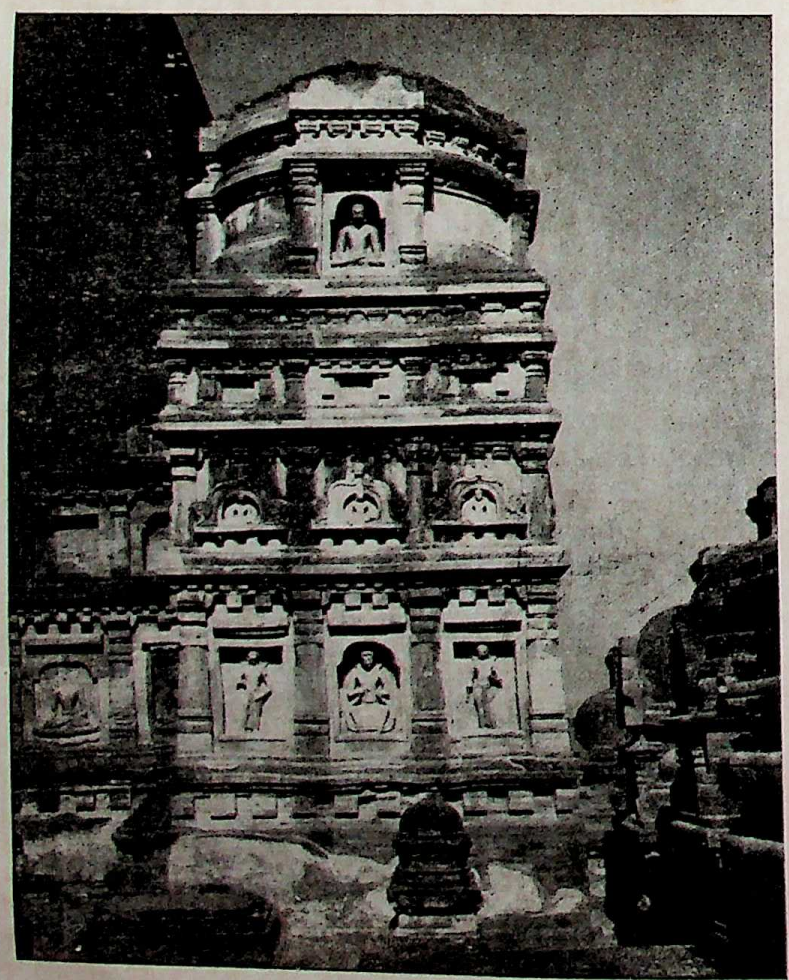
It was this great calamity which brought about a reorientation in our cultural and educational foundations. The pitiful processions of refugees who escaped the hands of vandals sought shelter in Central India and places had to be found for an over flow of refugees. It was at this stage that Nalanda, Vikramasila and Oddiyana suddenly soared on wings of fame. The centre of gravity of Buddhist education had shifted from the North-West to North-East. What is more, it became a confluence of three streams. It not only became a Buddhist University but on the mudflats of Panchane river (Sappini of Pali literature)—now changing its course—three principal religions met to confer in this village of mud hovels, a significant character not found in other sites. These three religions, Brahminism, Buddhism and Jainism, met here to pursue their own "ways" to find salvation for the human soul.

The whole of the monastic ruins of Nalanda have not been found. What has been found is the backyard. Whether it extended further towards north in the area now occupied by the villages of Surajpur and Bargaon are moot points.

The University site of Nalanda had a very definite plan. At the furthest end was a *Stupa*. On left side were series of temples (*Viharas*) and on the right side were series of monasteries (*asramas*). The monasteries of Nalanda were of *Chatuhsala* type, that

A closer view of the seated Buddha

A shrine in Nalanda, built in the sixth century A.D.



is, open rectangular courtyard in the centre with a well, surrounded by peristyled verandah with rooms behind it. But they had some special features. Near the entrance was a secret chamber. The central room facing the entrance was used as a shrine and there was a *stupa*, too. The monastic remains at Nalanda had a chequered history and as one group of monasteries and shrines fell into ruins, the next series was erected exactly over the older alignments. Thus in Monastery No. 1 there are distinctly seven sequences of structures. Some of these monasteries had ovens for melting metals.

The most important structural complex at Nalanda is the *Stupa* site No. 3. At present it is a huge structure. In the very beginning it was a very small *Stupa*, which was enclosed in a fresh integument when it had fallen into ruins, and was not demolished. In this way the present collosal dimensions were reached by seven successive rebuilding activities. *Pari Passu*, after the third encasement actually became a terraced *Stupa*. Similar structures have been found at Sarnath (*Chaukhandi Stupa*), Ahichhatra (Temples No. 1 and 2), Paharpur and Rangamati in East Pakistan. The most interesting is the fifth structure which had a frieze of stucco sculptures in niches, belonging to the sixth century of the Christian era. The most significant point to bear in mind is that the images of the

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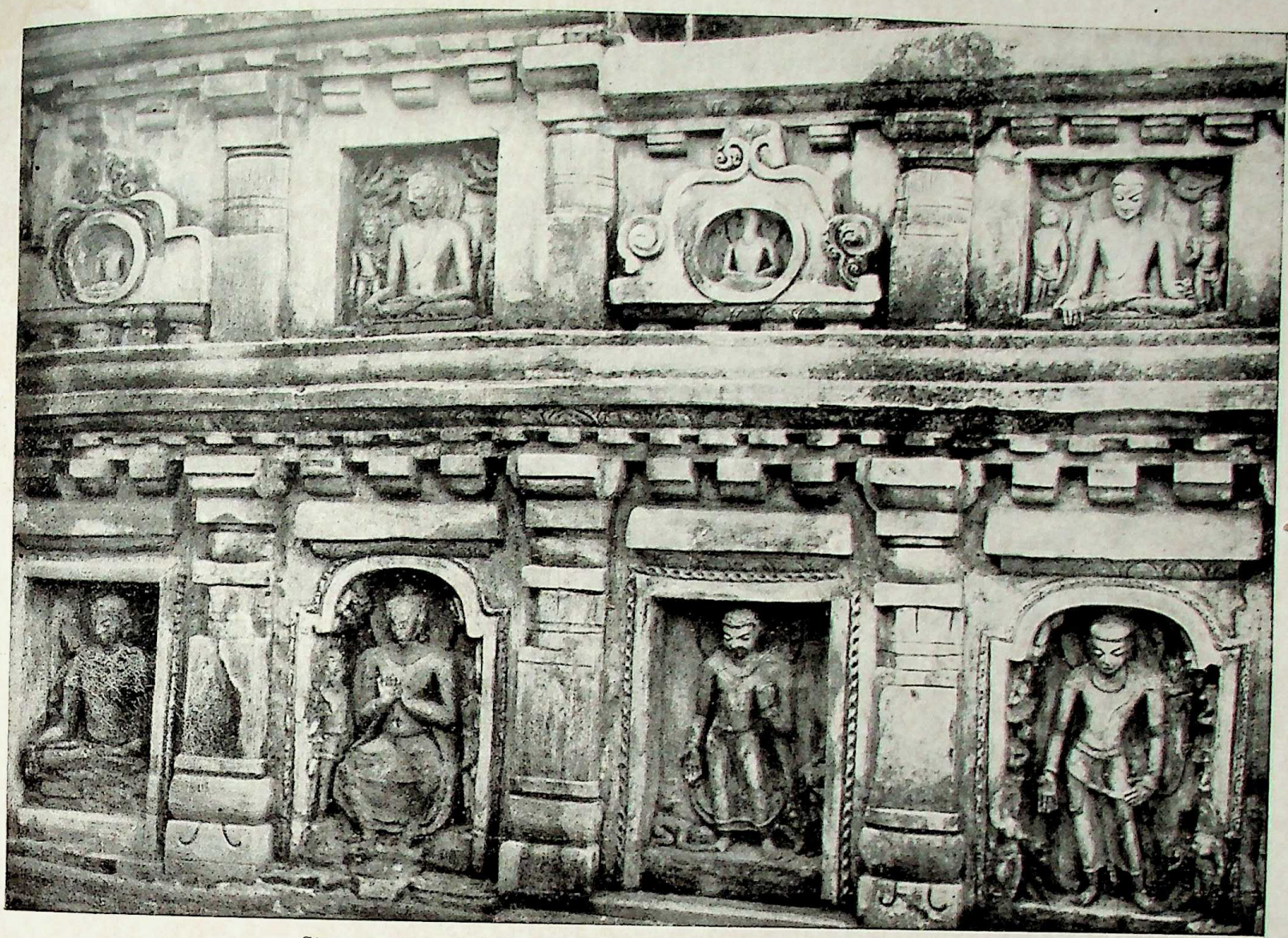

Stucco figures of the Buddha on the outer walls of the Great Stupa

Buddha have a foldless drapery of Banaras school, unlike the Eastern Indian School of sculpture.

Amongst the temples the most important is the Temple No. 2. The moulded plinth of this temple has a dado of 211 relief panels containing scenes from the *Jatakas, Ramayana,* Saiva mythology, Brahaminical gods, etc. The themes as well as the style of the relief work take them to the sixth century of the Christian era and make one feel that they were reutilised from some other earlier fane. Actually the existing foundations belong probably to the tenth century of the Christian era.

The temples at Nalanda have one uniform plan which is similar to that of the great temple at Gaya. This generally consist of an elevated terrace made accessible by a steep flight of steps. In the front possibly there was a porch, behind which was the sanctum with a lofty tower which, however, have perished. Around the sanctum was a spacious circumambulatory passage. In each corner was a small shrine; walls of both the sanctum and smaller shrines contained niches which displayed stucco images. Each of these, possibly, contained a colossal image of the Buddha in unbaked clay, which was probably coloured as is even now done in the cause of the images of Hindu divinities.

Nalanda in all probablity was an important centre for metallurgy and metal-casting. A very large number of images other than *tantrik* Buddhism have been found there. Two brick built furnaces in a monastery have already been mentioned. Near Chaitya site No. 13, there exists another furnace, with four chambers in one square divided by short walls. Each chamber was provided with flues for the air to pass.

Just opposite to the excavated site is a small building erected on an islet on the dried up bed of river Panchane amongst mango groves. This is the small Archaeological Museum containing a priceless collection of antiquities.

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A view of the Mahanadi across which the Hirakud Dam is being constructed

State Development Plan

Orissa

B. Mukerji

THE economy of the State is primarily agricultural and even that is undeveloped. It has a large population of Adivasis, Scheduled Castes and other backward classes. Poverty, ignorance and disease present problems of a magnitude hardly to be met with in any other part of India.

When the State came to be formed, it did not possess even the normal administrative set up, much less one that could undertake any big programme of development. It had hardly realised its separate entity when it had to face the problems created by the Second World War. Not until peaceful conditions returned could development schemes even of a rudimentary nature be taken up.

After the conclusion of the war was framed an ambitious programme of Post-War Reconstruction which aimed at an all round development of the State. This programme was to have begun from April 1947 but remained largely on paper and an interim two year plan which preceded it and consisted of certain special priority and preparatory schemes only, contemplating a total expenditure of Rs. 19.2 million, accounted for the bulk of the State's development activities in the pre-Plan period.

The present Five Year Plan as originally drawn up envisaged a total expenditure of Rs. 350 million. The needs of the State had greatly expanded due to the merger of the Princely States which had almost doubled its area and made its poulation one and a half times. After examining the resources which the State

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could be expected to raise during the Plan period and the assistance which the Centre could provide, the Planning Commission considered a Plan of Rs. 350 million too big and reduced its size to Rs. 150 million.

Schemes of the highest priority alone, therefore, could be retained in the Plan. Later certain additions had to be made to the Plan and recently it has undergone some revision and adjustments at the instance of the Planning Commission to provide increased avenues of employment. The Plan, as it finally stands, provides for a total expenditure of Rs. 191 million. The limited space at my disposal permits me only to touch upon some of the salient features of the Plan.

The acute food shortage that faced the country when the Plan was prepared made it necessary to give first importance to increase the food production. But even otherwise for a State with a wholly agricultural economy the improvement of agriculture must be the principal objective. Even for industrial development an expanding agriculture alone can provide the necessary foundation.

The Plan provides for a total outlay of Rs. 50 million on schemes of agriculture and irrigation. It aims at securing agricultural improvement through agricultural extension, research and training. Provision has been made for distribution of improved seeds, manure and fertilisers and for taking to the farmer the technical knowledge and equipment necessary to increase his production.

Research will add more and more to our technical knowledge and the results of research will be demonstrated to the cultivators. The Plan also provides for training an adequate number of qualified personnel to take up extension and research work. An agricultural college at Bhubaneswar and two agricultural schools started functioning from this year. An extension training centre had earlier been started to give orientation training to gram sewaks and an agricultural wing has now been attached to it.

Our farms are being multiplied and developed to test and demonstrate the results of research and to raise nucleus seeds. A central research station with sections for agronomy, chemistry, entomology, mycology, botany and horticulture is being started in conjunction with the agriculture college.

The irrigation schemes have a provision of Rs. 30 million in the Plan and will provide irrigation to about 600,000 acres of land. A large number of simple and small irrigation schemes have been executed (and more are being executed) through the agencies of the Revenue Department. These have conferred the benefit of irrigation over a wide area and particularly in areas which had not enjoyed it before. These schemes have been very popular with the people who have been contributing substantially towards their cost.

The Plan provides for substantial development of electric power and its utilisation, the total provision for which is Rs. 50 million. Power would be available primarily from the Machkund Hydro-electric (joint) Scheme and the Hirakud Multi-Purpose Scheme and

Work in progress on the Hirakud Dam

all the transmission lines necessary for utilisation of the power will be laid.

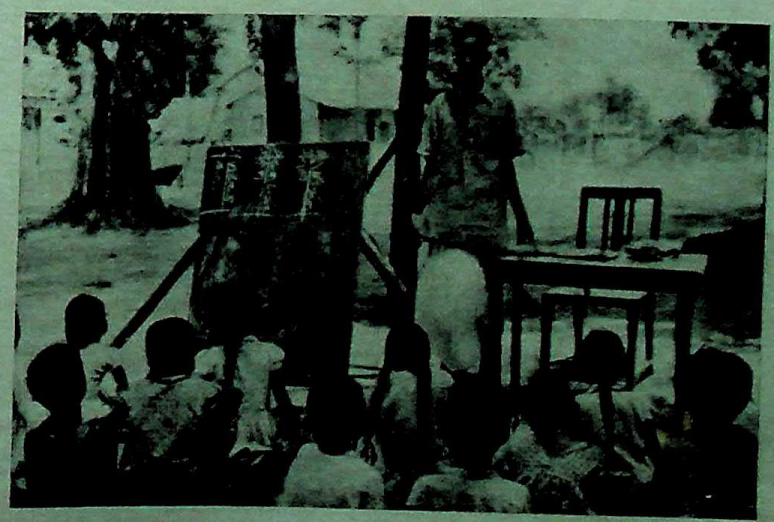
The first scheme, being executed jointly by the State Governments of Madras and Orissa, will generate 17,250 kw during the Plan period and 103,500 kw ultimately. Orissa's share of this power is 30 per cent and will be available at several places in the districts of Koraput and Ganjam. On the completion of the first stage of the Hirakud Project 85,500 kw would become available for the districts of Sambalpur, Sundergarh, Bolangir, Dhenkanal, Cuttack and Puri.

In the second stage power would be available in the districts of Mayurbhanj, Keonjhar and Kalahandi. To develop load thermal and diesal power generating units have been or will be installed at a number of places. Of these, the Cuttack Thermal Station, already completed, is the most important with a capacity of 5,000 kw.

In the present Plan industrial development has been largely left to the private sector. But the provision of hydro-electric power would necessarily open up great possibilities for industrial development. Large scale industrial development of the State can therefore be foreseen during the Second Five Year Plan.

Amongst the major industries that are likely to develop will be paper, textile, cement, jute, sugar, ferro-

An open-air class for children



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Medical Officer examining a labourer in a State hospital

manganese and ferro alloys and chemicals. A cement factory has already been established at Rajgangpur and negotiations for the setting up of Ferro-Manganese and Aluminium factories are well advanced.

The decision already taken to locate a Steel Factory at Rourkela is of major importance. It will promote a large number of subsidiary industries in that area. In order to confer greater social benefits on the pepole, particularly of the rural areas, schemes for utilising the power in a large number of small units of production all over the countryside are being worked out.

In the Second Plan it would be possible to foster the development of small scale industries which will use machinery and electric power and will be dispersed over a wide area. Care would be taken to see that this line of development does not adversely affect the cottage industries or come in conflict with big industries.

A Small Scale Industries Institute, which will serve as research, production and training centre, is being set up at Cuttack to study the lines of development that can be undertaken. Adequate provision has also been made in the Plan for the training of technicians and for promoting cottage and village industries.

Considerable importance has been given in the Plan to road development for which a provision of Rs. 20 million has been made. The development of communications is a matter of vital importance to the economy of the State. The task is gigantic and even at the end of the present Plan much will remain to be done, but what will be accomplished under the Plan will, by no means, be insignificant.

In the field of veterinary and animal husbandry the Plan aims at improvement in the indigenous stock of cattle, sheep and poultry and for treatment and control of cattle and poultry diseases. The Plan for forest development aims at better conservation and better exploitation of the State's forest wealth.

In the field of co-operation the Plan provides for co-operative education and training and technical and financial assistance. New and beneficial forms of co-operative endeavour are being encouraged. The Plan for fisheries provides for development of inland fisheries by increasing fry production, reclamation of swamps and improvement of tanks and stocking them with fish-fry, and the development of estuarine fisheries.

In the sphere of social services the Plan provides for a total expenditure of Rs. 45 million on expansion of education, medical and public health facilities, rural development and a large number of schemes for the amelioration of the backward classes. As much as Rs. 17.2 million have been provided for the expansion of primary and basic education and secondary education. Expansion of social education and adult education has been given due place in the Plan.

The Medical Plan provides for improvement of the Medical College at Cuttack and the attached hospital, for training of auxiliary medical personnel, such as, midwives, *dais*, health visitors, compounders, etc., for opening of new dispensaries, for expansion of maternity and child welfare services and for better facilities for the treatment of the principal diseases, namely, malaria, filaria, leprosy and tuberculosis and for protected water supply in urban and rural areas. Importance has been given to the improvement of water supply in the rural areas for which a provision of Rs. 6.5 million has been made.

Scheduled Tribes, Scheduled Castes and other backward classes form 66.7 per cent of the total population of the State. Their backward condition and the vast undeveloped areas in which they live make the problem of their welfare and amelioration collosal. The Plan has made a total provision of Rs. 11 million for their welfare. It provides for establishing a large number of Ashram Schools where the Adivasi boys are taught useful vocations along with general education, for the settlement of Adivasis on land to wean them away from the evil practice of shifting cultivation, for the development of communications in the Scheduled Areas, for the promotion of special types of co-operative societies for helping the Adivasis and for other welfare activities. A Tribal Research Bureau has been established for studying the sociological problems of the tribal people on scientific lines.

The Hirakud Project, the community projects and the national extension service, strictly speaking, are not schemes of the State Plan, but this account will remain incomplete without a word said about these. The Hirakud Project is one of the major river valley schemes in India. It has a four-fold objective, namely, flood control, generation of hydro-electric power, extension of irrigation, and to a somewhat minor extent, development of navigation.

The flood waters of the catchment area would be stored in the huge reservoir that will be formed at Hirakud and the flow of this water would then be regulated. When fully developed, the Project will generate 123,000 kw of electric power. Nearly two million acres of land will be irrigated on completion of stage I of the Hirakud Project in the districts of Sambalpur and Bolangir and in the Mahanadi delta area. This irrigation would result in an additional production of 370,000 tons of rice in the State.

The benefit of navigation from the Project will

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come at a later stage. The first stage of the construction, the estimate of which now stands at Rs. 920.8 million, is expected to be completed by the end of 1956, and supply of water for irrigation and of power is expected to start from July 1956. The delta irrigation is estimated to cost Rs. 149.2 million and the work will be started very soon. It will bring over a million acres of land under irrigation and will increase the production of paddy by 4.5 million maunds per year.

The community projects and the national extension service are a new approach to the problem of rural reconstruction and are based on the sound idea that rural life is an organic whole, that the villager is a multi-purpose being and in order to deal successfully with his problems the whole range of rural problems have to be tackled simultaneously. They aim at securing the fullest development of the material and human resources of an area and have for their objectives, creation of a progressive outlook among the rural people, creation of the habit of co-operative action, increased production and increased employment.

Emphasis is laid on securing the co-operation of the people in working out their own betterment largely with their own efforts and with only a small assistance from Government. The project areas are being provided with trained workers at the village level who will work as common agents of all development departments and will help the villager in his day-to-day life. The programme of work is prepared in consultation with the people and is implemented in close association with them.

The main lines of activity are agriculture and rural development including irrigation, cottage and small scale industries, education including social, vocational and technical education, health, housing and communications. The Officers of all the development departments work at all levels as a team under a single leader. At the State level the Development Commissioner functions as the leader, at the district level the District Magistrate and at the project level the Project Executive Officer.

In Orissa State three full projects consisting of three blocks each were started in October 1952. The total area of these projects is 2,095 sq. miles and the population 790,000. The number of villages covered is 2,376. In October 1953 three single blocks were started. In the first fifteen months in the three full projects a total expenditure of Rs. 1.7 million was incurred on Government account. The people contributed to the extent of Rs. 700,000. Taking into account the poverty of the people and their general backwardness, their contribution has been substantial but more so has been their enthusiasm and keenness to play their due role.

Spectacular results in respect of a programme taken up primarily for fostering self reliance in the village community and faith in constructive work are difficult to expect in such a short period, but signs are not wanting that the psychological effect which the project aims at creating is being achieved. The programme has firmly gripped the imagination of the people; their participation is steadily growing, and it would not be too optimistic to expect that in course of time their participation will develop into mass enthusiasm.

Even in terms of physical achievement the results have been substantial. Better seeds, use of fertilisers and green manure, of improved agricultural implements, preparation of compost pits, growing of vegetables, adoption of the Japanese method of rice cultivation and other improved agricultural practices have been spreading steadily.

Many acres of arable land have been reclaimed and brought under cultivation. New crops have been raised, such as, wheat, in areas where they were not known before. Substantial areas have been converted from single to double crop. Much work has been done for the upgrading of cattle and poultry through artificial insemination and establishment of natural breeding centres, castration of scrub bulls, etc. Mass protection of cattle against disease and treatment of diseased cattle has been undertaken.

Protected water supply has been provided in a large number of villages by construction of sanitary wells. Drainage has been improved in many villages and sanitary latrines constructed. A number of maternity centres have been established and many villages provided with the services of trained midwives and *dais*. Mass inoculation against cholera, vaccination against small pox and B.C.G. against Tuberculosis have been undertaken.

Many schools have been established or converted into basic type, adult literacy centres organised and recreational activities undertaken as items in an all round programme of social education. Many miles of village roads have been laid or are under construction. Production-cum-training centres have been established for training villagers in cottage industries and other steps are taken to develop cottage industries.

The national extension service has been conceived on more or less similar lines as the community projects, though it has a smaller budget and, therefore, aims at a lower standard of servicing. So far 17 national extension service blocks have been started; two were started in October 1953 and the remaining 15 in April 1954. A good beginning has been made in most of the blocks.

The First Five Year Plan has been the first attempt at fostering planned economic development and promoting social welfare. Its contents had to be determined largely by circumstances and by what had already been started in the pre-Plan period and it had to take into account the serious limitations of finance, trained personnel and capacity of the administrative machinery.

Nevertheless, substantial achievement would be made in the spheres of food production, irrigation, provision of electric power and education. Although within the freedom that there was an attempt was made to balance the demand for the fulfilment of present needs and the necessity for providing the foundations for greater achievements in the future years, the Plan will achieve the latter objective more than the former. In this sense it should be regarded as a prelude to long term planning.

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Manipur On The March

T. Kipgen

MANIPUR State has a population of 577,000 of which 194,000 are scheduled tribes. The area of the State is 8,638 sq. miles of which only 700 sq. miles are taken up by the Central valley. The rest is all hill area occupied by the scheduled tribes. Imphal is the capital town, having a population of 132,000, according to the 1951 Census.

In the year 1949-50, when the Indian States were integrated the receipts and expenditure of the State were Rs. 3.51 million and Rs. 4.81 million respectively. The corresponding figures for 1953-54 were Rs. 3.466 million and Rs. 10.84 million. The increase in the expenditure is due mainly to development projects taken up under the First Five Year Plan and, to some extent, to administrative reorganisation effected after the integration of States The total amount allotted under the Five Year Plan is Rs. 15.48 million excluding Rs. 2.61 million allotted for community projects and another Rs. 1.4 million for tribal welfare allotted during 1952-53 and 1953-54.

The more important schemes included in the Five Year Plan are :

COMMUNICATIONS : The scheme for the improvement of communications takes 52 per cent of the total allotted amount. The construction of two new major roads, viz., the Kangpokpi-Tamenglong Road and Litan-Ukhrul Road, both in the tribal areas, is under consideration. The two roads are 75 and 24 miles long respectively.

PUBLIC HEALTH SCHEME AND MEDICAL DEPARTMENT: The Imphal Water Supply Scheme which is estimated to cost Rs. 1.65 million is the most important and is being directly undertaken by the Central Public Works Department. A sum of Rs. 400,000 is also provided

Famous Manipur Ras dance

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for the improvement of rural water supply by the excavation of tanks. Only one-fifth of the expenditure is being borne by the Government and the rest by the people themselves.

The following is a chart showing medical facilities existing in the State in 1953-54, as compared to those in 1949-50 :

	1949-50	1953-54
(a) Hospitals	14	17
(b) Dispensaries	6	34
(c) Patients treated	75,904	395,549

The Leprosy Colony at Imphal has been provided with an additional 90 beds, and the lepers themselves now grow their own food crops. There is also a school and segregation ward for the healthy children of the inmates.

The B.C.G. campaign was started in August 1952, and the number of persons, hitherto tuberculine, tested and vaccinated is 149,034 and 72,844 respectively.

There was a dearth of compounders and midwives before the integration of the State. Training schools were, however, started in 1952-53 at Imphal. These schools are now affiliated to the Assam Medical Council and Assam Nursing Council respectively. So far, 50 boys and 23 girls have become qualified compounders and midwives. Of these, 25 compounders and 10 midwives have been absorbed in Government service. The rest are doing private practice in their own villages.

Most of the existing doctors are only L.M.P's. Some of them have been sent outside the State for special training including short term M.B.B.S. course.

Under the anti-malarial measures, 54,273 houses have been sprayed with D.D.T. A Maternity and Child Welfare Centre was opened in 1953-54 and its foundation-stone was laid on Nevember 30, 1953, by Rajkumari Amrit Kaur, the Union Health Minister.

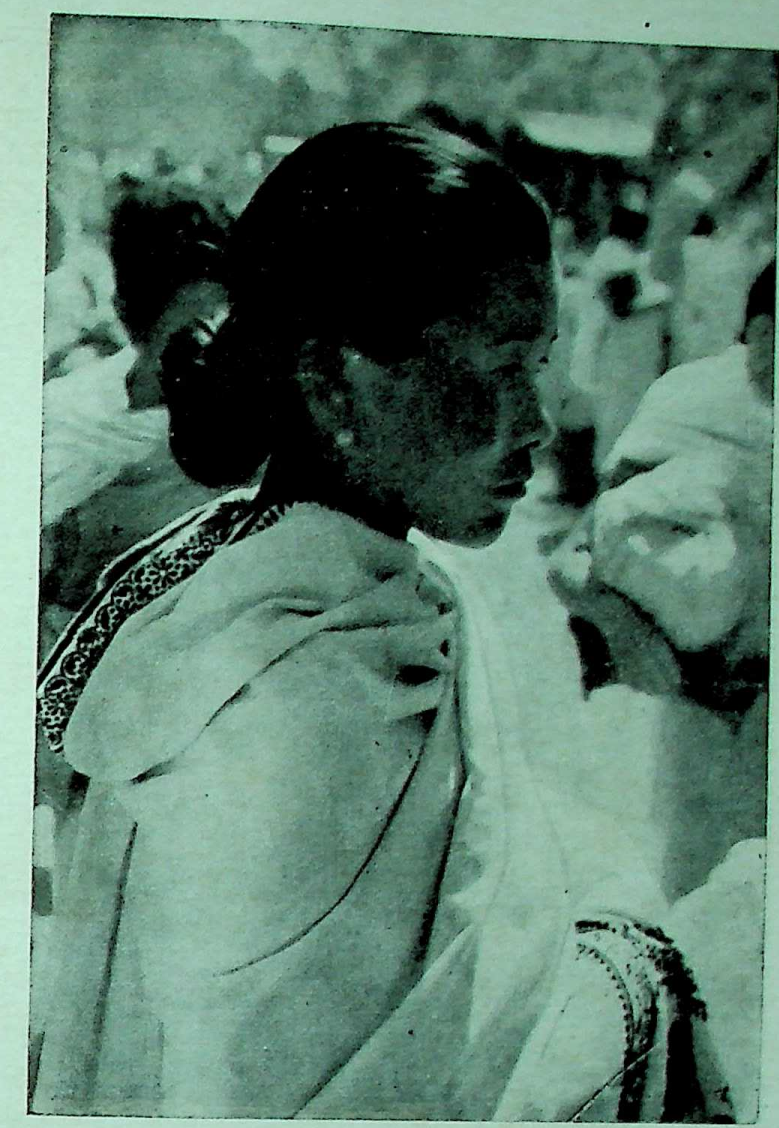
EDUCATION : The following figures show the number of schools at the time of integration and in 1953-54 :

	1949-50			1953-54		
	Government	Aided	Private	Government	Aided	Private
Primary Schools	224	121	139	347	154	160
Middle Schools	13	24	12	23	16	26
High Schools	2	5	3	4	14	8
Colleges	1	Nil	Nil	1	Nil	1

A number of graduate teachers of the Government and Government Aided High Schools were sent outside the State for the Teachers' Training Course. A training school for primary and middle school teachers has been opened at Imphal.

There is only one Government College in the State. An Urban Junior Basic School was started in 1953-54. Previously basic education was unknown in the State.

ROAD TRANSPORT : The Imphal-Manipur Road, 134 miles long, is the life-line of Manipur. For the convenience of passengers and movement of essential commodities, the Government runs a Motor Transport Service which also functions as the agent for the North-Eastern Railway. It also serves the needs of the Naga Hills District of Assam State.



A Manipur girl with bun-style coiffure

FORESTS : Six hundred acres of land have been afforested so far. The extraction method for timber and other forest materials have been improved, as the traditional method of extraction by buffaloes was unsatisfactory.

VETERINARY : A key scheme has been started for the improvement of the cattle wealth in the State. Red Sindhi bulls have been purchased. So far 12,379 mature cows have been selected for artificial insemination and 1,325 undesirable bulls have been castrated. The number of veterinary hospitals has increased from two in 1949 to five at present.

POWER SCHEME : Imphal obtains its power supply for lighting and industrial purposes from a small hydro-electric station located 14 miles away. This has proved inadequate. Owing to an increase of population and development of cottage industries, a scheme to increase the existing power supply by 350 kw at a cost of Rs. 1.2 million, is being implemented.

TRIBAL WELFARE : Under Article 275 (1) of the Constitution, the Central Government allotted a special

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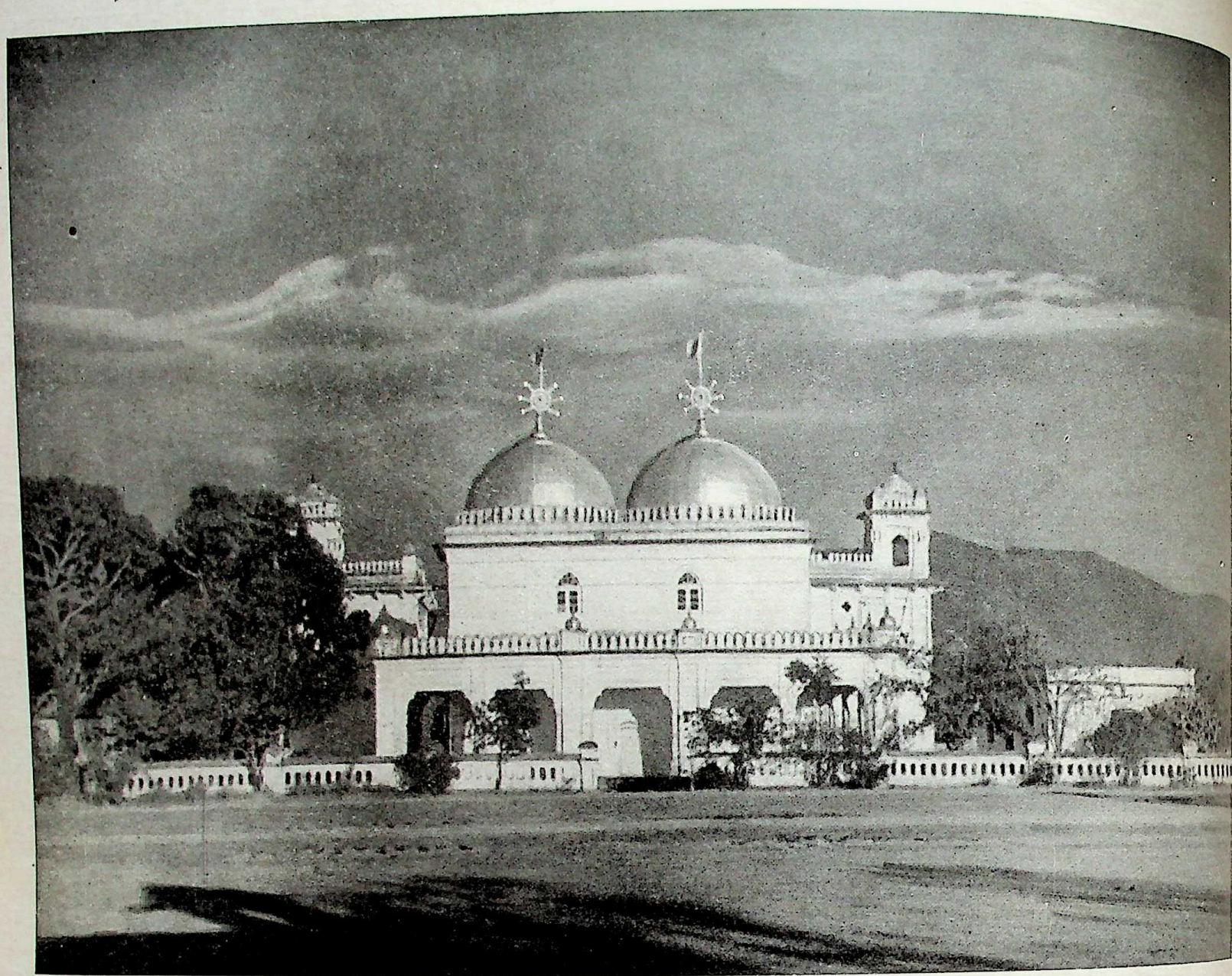

Twin-domed temple in the ground of the palace at Manipur

grant of Rs. 500,000 in 1952-53, Rs. 900,000 in 1953-54 and Rs. one million in 1954-55 for the welfare of the scheduled tribes in the State. This is in addition to the amounts which are being spent for the welfare of the scheduled tribes from the normal Departmental Budget. Up to the end of March 1954 this special grant was utilised thus :

Eleven hostels including kitchens, 12 M. E. school buildings and 42 L. P. school buildings have been constructed, the Government contribution being in the shape of C. I. sheets for roofing and a small amount of cash grant to enable the villagers to engage good carpenters.

Twenty dispensary buildings have been constructed and 99 centres have been opened for free distribution of medicines to the tribal people. The distribution is made through the chiefs or other respectable persons of the locality who are given instructions in writing. The water supply at Ukhrul, Churachandpur and Tamenglong hill stations is also being improved.

The most important road work being undertaken is the construction of the Tadabi-Tungjoi Road, which is still in progress. This road is diverted at Tadabi on the Imphal-Dimapur Road to Ukhrul.

A sum of Rs. 30,000 was given as contribution to the people of Ukhrul area who by voluntary labour constructed a 30-mile long road. The value of the work done is Rs. 172,000. Iron ropes and other materials are given to the tribal people for the construction of country-type suspension bridges.

A Fruit Farm was opened in 1952-53 at Ukhrul, a sub-divisional headquarter about 6,000 feet above sea-level.

In order to introduce handloom weaving and carpentry in the tribal areas, training schools for tribal boys and girls were established at Imphal in 1952-53. The courses are of one year's duration and admit ten trainees each.

Seven post offices were opened in 1952-53 in the tribal areas. Six local experts are engaged for finding out suitable hill slopes for terrace cultivation by irrigation channels and for encouraging the people to take up terracing. Shifting cultivation not only ruins the forest wealth but also produces insufficient food. It also aggravates floods in the valley. Irrigation channels to bring 700 acres of hill slopes under terrace cultivation have been constructed with 50 per cent contribution from the Government.

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COMMUNITY PROJECT: The Chief Commissioner of Manipur inaugurated the Thoubal Community Project Block on October 2, 1952. The area is approximately 300 sq. miles and has a population of 77,105. Earthwork for a 9-mile long all-weather road from Thoubal to Mayang Imphal and 49 miles of *kutcha* roads was completed by the end of March last year. The Government contribution for these roads including cost of bridges and culverts is Rs. 140,165, while the value of the people's contribution in labour, etc. is Rs. 234,000.

BUILDINGS: Several buildings such as civil hospitals, veterinary hospitals and farm buildings were constructed by the Government at a cost of Rs. 176,000.

PUBLIC HEALTH SCHEME: Midwives give training to the local *dais*. So far 74 local *dais* have received training. Forty-two tanks were excavated during 1952-1954.

EDUCATION: Twenty-five Government Lower Primary Schools have been opened. The people's contribution in constructing school buildings is Rs. 72,000 excluding the Government's contribution of Rs. 25,000 in the form of C. I. Sheets for roofing. The number of Government L. P. Schools in the block is now 49. Adult education has also been introduced for the first time in Manipur. So far 4,500 adults have learnt to read and write. The people's contribution for buildings and other materials for running these centres is Rs. 13,000.

The local people also started 46 L. P. Schools in the area on their own initiative and cost. The cost for the *kutcha* buildings alone comes to Rs. 21.000.

LOUSHIPAT: There is a vast water-logged are known as Loushipat comprising about 5,000 acres of land. The people of the locality on their own initiative have taken up the construction of a canal to drain out the water from Loushipat to Kharungpat which is also a vast water-logged area. The canal will be 1,100 feet long, 70 feet deep and 8 feet wide. The labourers are landless cultivators from the neighbouring villages and are constructing the canal free of cost on the understanding that when the land is reclaimed, it will be distributed amongst them. The work is of a dangerous kind involving digging of rock and granite at considerable depth. A canal 5 miles long, 10 feet wide and 6 feet deep has also been dug across the Loushipat to take the water up to the mouth of the canal.

AGRICULTURE: Improvement of agriculture, though a difficult task for a small State with limited resources, has been one of the chief concerns of the Manipur State Administration since integration. This fact is reflected in the State's increased expenditure for agriculture during recent years. The 1949-50 budget allocated for the agriculture only Rs. 44,115. In 1954, it was increased to Rs. 93,000 available from the Tribal Welfare Grant. In addition, the Thoubal Community Project is expected to spend a considerable amount for agriculture.

Till 1953, selection and multiplication of improved seeds was being carried out at Imphal on a small farm run by the Agriculture Department. Similar work was also started last year on the much bigger Wangbal Farm of the Community Project. Another block of ten acres within the Project area is being exclusively utilised for the multiplication of paddy seeds.

Another farm is being opened at Churachandpur. Trials to improve various fruits are also in progress at the Imphal and Wangbal Farms. During 1954 about 45,000 pineapple suckers were planted in the Community Project area.

Poultry breeding has been taken up on the farms at Ukhrul and Wangbal. The breeds maintained are the Rhode Island Red and the White Leghorn. These have attracted the attention of local poultry breeders.

Three Grow More Food Schemes are under operation, one for seed distribution, one for plant protection and the third for crop competition.

Pan and black pepper are being grown on an experimental basis at the Wangbal Farm—the latter also in some private holdings.

A number of demonstrations to popularise the use of manures have been organised on private holdings in the Community Project area. Experiments on boro paddy were continued last year.

In February last, the State Department of Agriculture was placed under a Director. The questions of providing the department with a much-needed botanical section and a suitable experimental station are now receiving attention. The Wangbal Farm will most probably become the main experimental centre of the Department in the future. It is the biggest Government farm in the State having an area of about 65 acres.

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CORRECTION

In September-October 1954 issue at page 32, column 2, para. 5, line 5 *read* "The production of fish has increased from 700,000 mds. in 1949-50 to 1,170,000 mds. in 1953-54" *for* "The production of fish has increased from 122.42 mds. in 1950-51 to 1,170,000 mds. in 1953-54." Also in para 6, line 7 *read* "The per capita production of fish has increased from 122.42 mds. in 1950-51 to 157.00 in 1953-54" *for* "The per capita production of fish has increased from 12.42 mds. in 1950-51 to 157.00 mds. in 1953-54."

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The MARCH OF INDIA

Vol. VII February 1955 No. 4

In this issue - - -

S. Dutt	THE WELFARE STATE IN EVOLUTION	3
Mary Sur	THE CHILDREN'S LITTLE THEATRE	6
T. V. Parvate	WATER AND POWER RESEARCH	10
K. Khanna	MOTIFS IN INDIAN SCULPTURE—ANIMALS	14
Betgeri Krishna Sharma	MALLAMMA'S MAHABHARAT (A SHORT STORY)	18
Philip and Halina Zealey	THE PAINTERS AND SCULPTORS OF ORISSA	21
Padmini Sen Gupta	RIVERS OF INDIA : THE BRAHMAPUTRA	24
Victor Rosner	MEGALITHIC METROPOLIS	30
Kala Thairani	INTER-UNIVERSITY YOUTH FESTIVAL	33
	BOOK REVIEWS	37
	OUR CONTRIBUTORS	37

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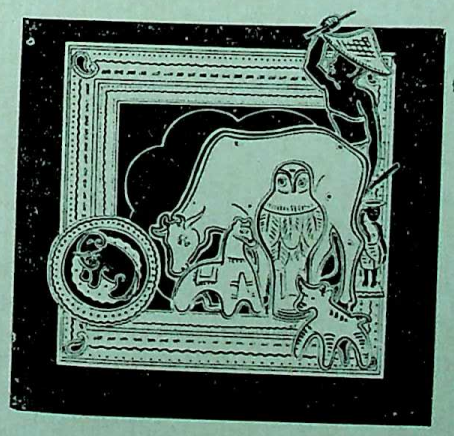

The painting on the cover is by Sushil Sarkar, our Staff Artist.

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A social worker pinning a flag to the dress of a village woman on the Indian Armed Forces Flag Day

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The Welfare State in Evolution

S. Dutt

INDIA stands committed, more clearly and categorically perhaps than any other country of the world today, to the ideal of the Welfare State.

The concept of the Welfare State is comparatively new in the political thought of the West; in India, however, it was anticipated, way back twenty-two centuries, by a great Buddhist emperor, whose illustrious memory Free India has now transferred from history's grey pages to her State emblem and insignia.

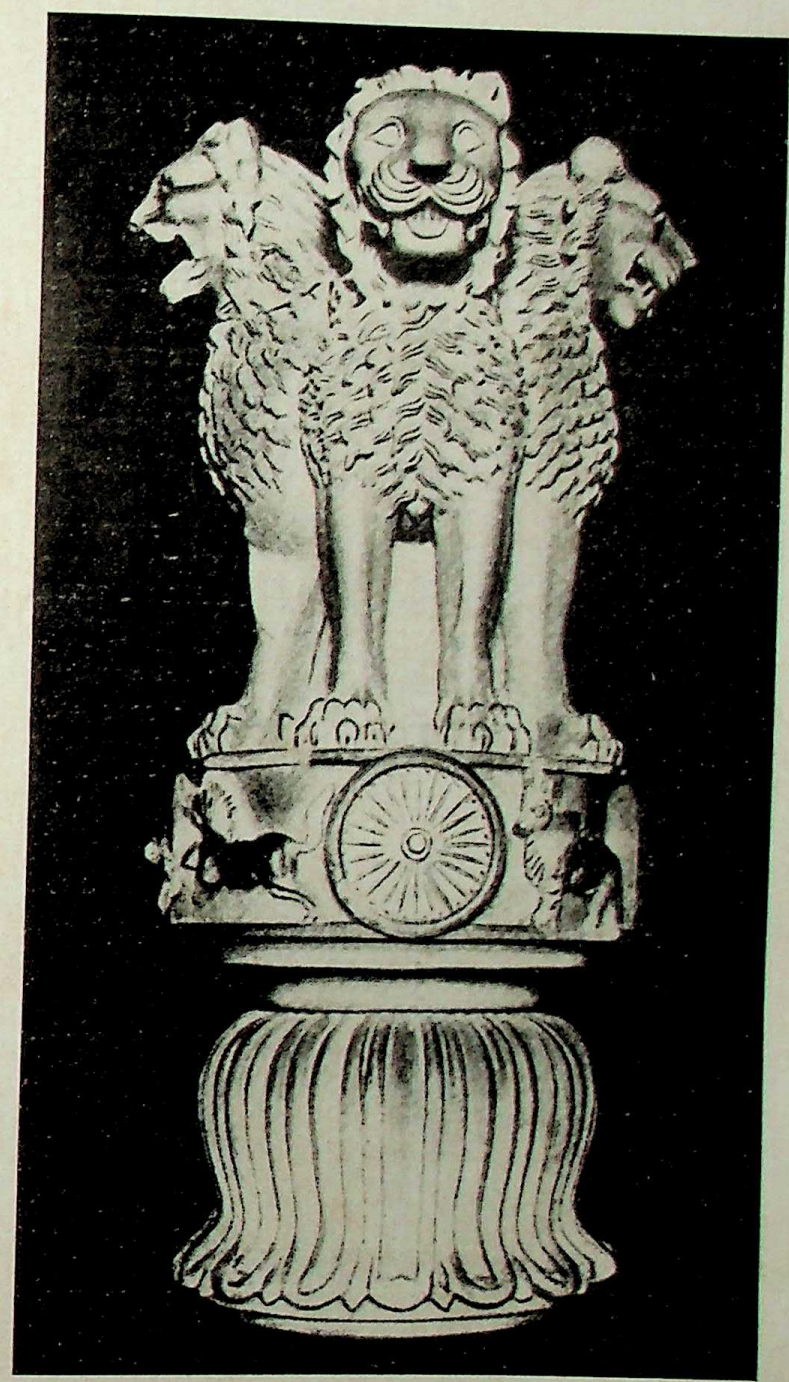
"The State, conceived in violence, is born to power" (MacIver):—this has been, till our time, the orthodox and accepted concept, and historical experience undoubtedly ratifies and confirms it,—for, with the possible exception of an insignificantly few "plebiscite" States, brought into existence by the defunct Leage of Nations, almost every State has started life incipiently in a revolution or a conquest and has emerged as a system of power.

But the State-idea has recently oriented itself in the West towards substitution of "welfare" in place of "power". The State has begun to be evaluated in other terms than as a power-system and regarded rather as an overall and organised agency to facilitate, develop and help towards fulfilling the life that people aim at in living together under a State.

Primarily, therefore, the State is supposed to be concerned with the basic values of life accepted by the people and organise social ends in terms of these values. Of the three established categories of a State's functoins, viz., Order, Protection, and Conservation and Development, it shifts emphasis deliberately to the third.

This emergent concept is put by Professor MacIver in a telling metaphor which envisages the State as "the paved highway of social life, bordered by fields and cities":

"All the business of life is rendered possible by its aid. It is the basis of all social communications. Therefore, whatever else a man may be, he must be a member, or at least a subject, of the State. If he does not share the responsibility for the highway, he must at least observe its rules. His home is in the fields or the cities, and there he gathers the fruits of his labours. The highway is for the sake of the life that is lived along it and beyond it"*.



Lion Capital—the State symbol of the Indian Union

Such a statement of the functions and uses of the State in relation to the life of the people reverses our

*Prof. MacIver's *The Modern State*, pp. 482-83.

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age-old concept, omitting what has been held to be the *sine qua non* of the State in political thinking of the East as well as of the West, where its extreme formulation is in Machiavelli's *The Prince*.

In the ancient political philosophy of India, monarchy is the normal form of State contemplated. The sovereign's functions are summed up by the term *Danda* (punitive power), and is outwardly symbolised by the *Raja-danda* (the King's sceptre). In the *Mahabharata* (vide *Rajadharma* in the *Shantiparva*), *Danda* is glorified as the means "to effect peace and give protection, maintain *Dharma* (right conduct) and brings about the fruition of the three *Vargas* (categories of Objects Desirable), viz., piety, wealth and satisfaction of material needs".

But it was Emperor Asoka (273-232 B.C.), who set up over this traditional concept of the State governed by sceptred power, a different concept,—of a State maintaining its unity and integrity, not under a system of power, but by an ideal bond willingly borne. He termed this as *Dhamma* (in the sense of Righteousness. as in the Biblical saying, "Righteous exalteth a nation"). He preached this ideal to the people through his edicts exhorting its acceptance on their part. It seems to have been his objective to convert the State from a reign of *Danda* to one of *Dhamma*.

Towards this end, he instituted in the government of his empire a new ministry—a "Ministry of Dhamma" and staffed it with a select group among his Chief Ministers, to whom the designation of "Chief Ministers of the Dhamma" (*Dhamma-Mahamatas*) was given. In several edicts he mentions it as a new ministry introduced by him into the Maurya Governments which he wishes to leave as a legacy to his successors on the throne.

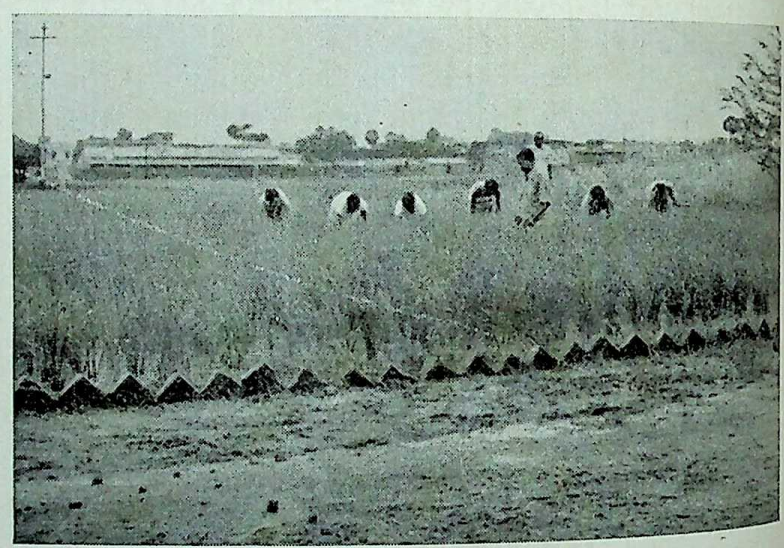
To this "Ministry of Dhamma" the emperor entrusted the execution of what in terms of modern conception may be described as a Plan, laid out to the pattern of society of that age, of Social Welfare for the people. Some of its pragmatic details, conceived, strangely enough, in the modern spirit in terms of social order and social justice, may be gathered piecemeal from different edicts.† And in one of these edicts, the emperor declares with pride and satisfaction that all over his far-flung empire the "sound of drum," *Bheri-ghosha*, has been drowned by the "sound of proclamation of the *Dhamma*", *Dhamma-ghosha*.

A village panchayat in session

Asoka may thus claim to be the ancient precursor of the modern idea of planned social welfare for the people by the State's functional agency. The recalling of Asoka out of the long line of India's great rulers of the past in Indian State emblems and insignia may be taken as symbolic affiliation of the Welfare State India aims at today to the one based on *Dhamma* by Asoka.

In what ways the young democracy of India is evolving this old and yet new concept of the Welfare State may be shown in a brief resume.

Following on the attainment of the status of "sovereign democratic republic" on January 28, 1947, the first act of the new Indian State was to adopt a written Constitution. The leading motive of the Constitution was thus enacted in Article 38:



A new approach to agricultural problems—the Japanese method of paddy cultivation

> "The State shall strive to promote the welfare of the people by securing and promoting as effectively as it may a social order in which justice, social, economic and political, shall inform all the institutions of the national life."

In Articles 39, 41, 43, 47, and 51 are set forth the main features inalienable from the social order the Constitution contemplates. Part III (on Fundamental Rights) and Part IV (on Directive Principles of State Policy), taken together, in which these Articles are included, give a complete framework for the Welfare

†See Dutt, "Asoka in the State Emblems of India," *March of India*, September-October, 1950.

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State, containing, as an English writer comments, "probably the most complete and explicit statement to be found in any state document in any country of the fundamental aims and aspirations of the Welfare State".‡

To uprear the Welfare State, of which the Constitution of India has made this framework, was expressly declared to be the objective of the Indian National Congress in free India at its plenary session at Nasik in September 1950. The Congress, which leads India's national government, declared simultaneously that towards that objective there must be "ordered

The construction of an all-weather road by villagers

progress" which will necessarily have to be planned, and welcomed therefore the appointment of a Planning Commission by the Government of India.

The condition of "ordered progress" posited in the Nasik Congress Resolution, precluded and ruled out by its implication any such revolutionary method as Russia had adopted in introducing the Russian "First Five Year Plan" in 1929. A different and democratic way of planning was thus pointed out by Sri Nehru in his Report to the All-India Congress Committee in July 1951 :

> "Communism's appeal to many" (said Sri Nehru) "has been based on its promise to satisfy certain essential human needs and to provide security. But we have seen that it brings in its train conflict and violence and authoritarianism and the suppression of the individual. Can we provide economic security and progress without sacrificing democratic liberties? There is no reason why this should not be possible, though the path may be difficult. This will involve social vision and a social purpose in all our activities. That will mean our deliberately

‡William A. Robson, "India as a Welfare State," *The Political Quarterly*, April-June, 1954.

Women dressing up a well built by voluntary labour under the Community Project Scheme

aiming at a new type of society whose chief purpose is the welfare of the people, not only in material living standards, but also in the things of the spirit. That is the Welfare State, which may be far from us now, but which we can progressively realise if we set our minds and hands to this great task".

It is the orderly and progressive realisation of this ideal, without "sacrifice of democratic liberties", that lends to the Five Year Plan of India its inward meaning and real purpose. It is articulated to the implicit Welfare State concept in the Constitution of India.

The First Five Year Plan, as presented by the Planning Commission to the country in December 1952, has now been in active operation for nearly four years. Its integrated developmental programmes on countrywide scale cover almost the whole field of the people's socio-economic life: they seek in various ways both to enrich and to transform it—by activising village communities and reviving their *panchayats*, by infusing the co-operative spirit and principle into both rural and urban economic activities, by a countrywide drive towards better modes of agriculture and greater expansion of industry, and by aiding voluntary and non-official agencies for social work and uplift throughout the length and breadth of the land.

So far as the scope of the Five Year Plan extends, the State in India is surely functioning today towards realisation of its set ideal of the Welfare State. The Indian National Congress at its last plenary session at Kalyani in January 1954 thought fit, lest we forget, to make a re-affirmation of the aim of planning in India,—"the establishment of a Welfare State with full employment."

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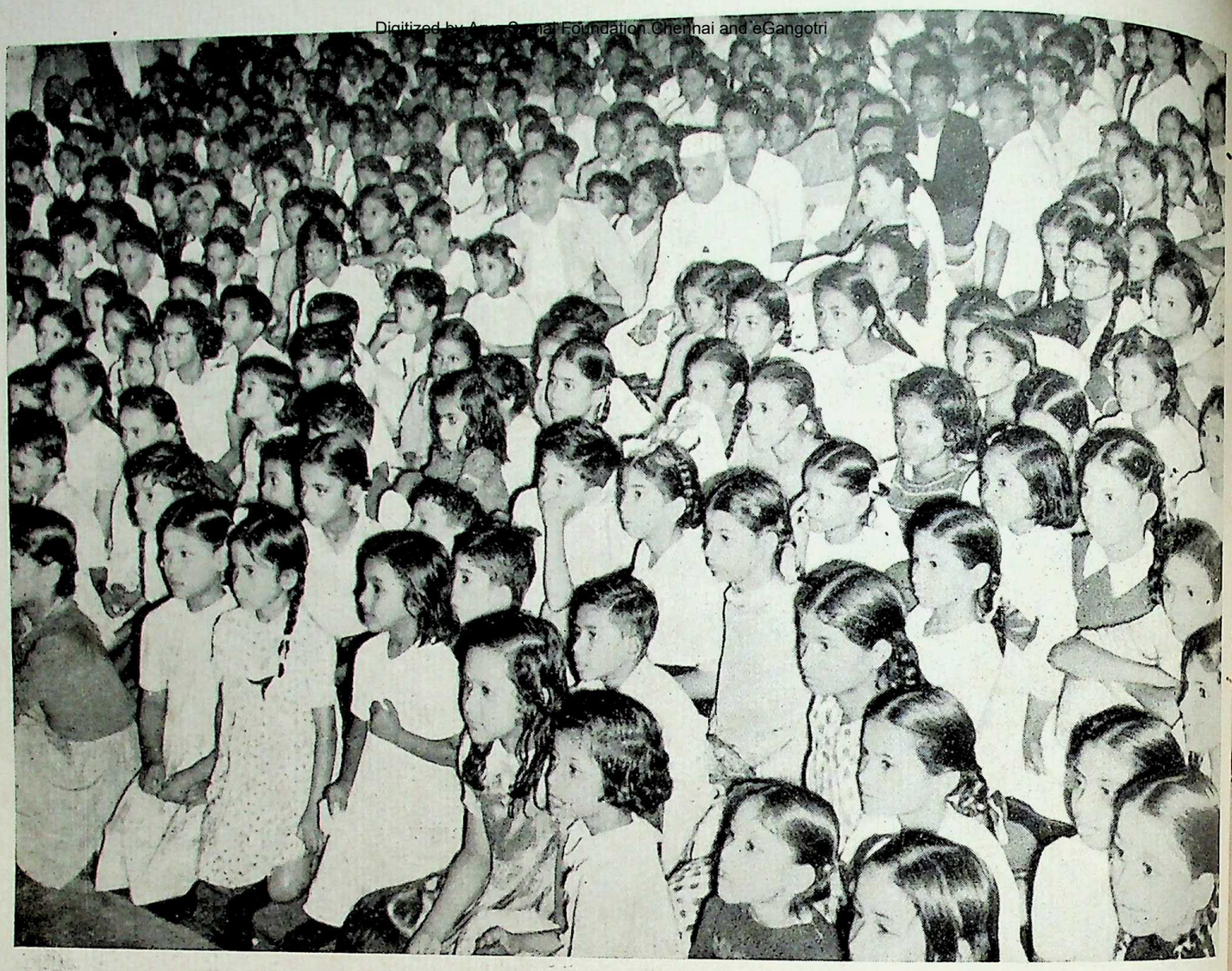

The Prime Minister watching CLT's performance in Delhi

The Children's Little Theatre

Mary Sur

INDIAN dancing is famous the world over, but we are seeing a new development of this ancient tradition in a movement started in Calcutta and known as The Children's Little Theatre. The object of this three-year old venture is to bring into the kindergarten classrooms the sense of colour and rhythm which is at the basis of India's dance tradition.

The children in our towns were tending to lose the spontaneous delight of rhythm and colour which accompanies the traditional festivals of the countryside. Their schools were rather dull places of learning.

If, said the sponsors of the movement, we can bring more colour and joy into the lives of our school children and develop their innate sense of rhythm, we shall at the same time give them poise and widen their outlook, giving them a new interest in their school life.

They looked at the old English nursery rhymes which set so well to music, and thought something of the same kind, but with a purely Indian setting, was needed for Indian schools. Numerous children's rhymes existed in Bengali, but most of them did not lend themselves to rhythmical music to which children could dance.

So the Children's Little Theatre wrote its own rhymes, set them to delightful modern Indian music, which appeals equally to the old and the young, and developed simple dance forms, mostly based on folk dancing, to suit the rhymes and the musical

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Little birds stepping out gaily to a musical rhyme

patterns for different age groups. The response of the children has been immediate and enthusiastic.

At the Children's Little Theatre Festival in Calcutta last year audiences of several thousand children and adults watched spellbound for six evenings the programmes put on by the different schools, clubs and centres affiliated to the movement. This was not theatre by adults playing down to the children; this was true theatre by the children and for children, and the many adult workers remained unobtrusively behind the scenes.

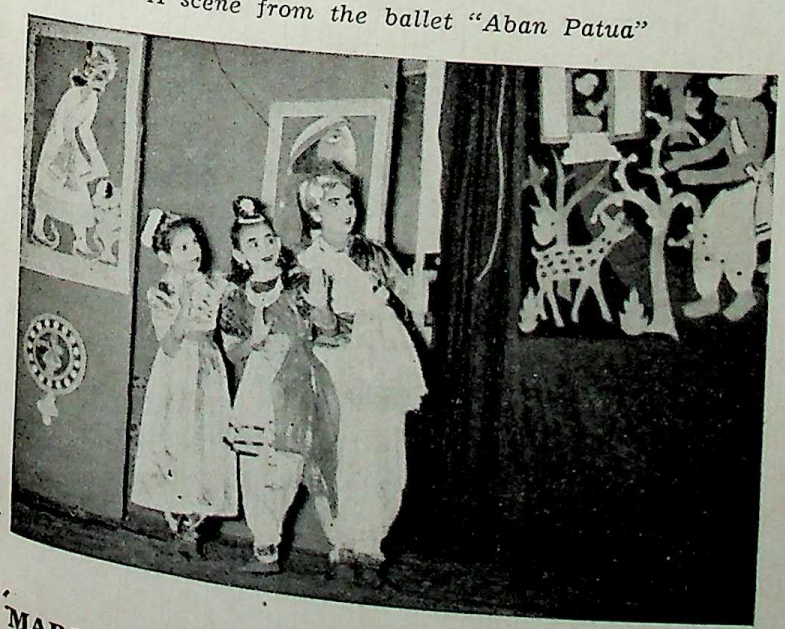
The atmosphere of the great festival pandal was like an enormous children's party. Hundreds of children of all ages sat in the children's enclosure unattended by their parents, and remained happy and enthralled throughout the show.

The Children's Little Theatre works in two ways. It has its own Training Centres—two at present in Calcutta—where the children who are its members meet two evenings a week, and where the new rhymes and rhythms are planned and developed in the light of the children's reactions to them.

Here also the more advanced groups take part in ballets specially written for them, in which drama plays a part as well as dancing; and the spoken word, music and singing behind the scenes are co-ordinated with infinite care and long practice with the performers who dance and mime on the stage.

At the same time the CLT works through the schools affiliated to it, helping the teachers to introduce in their classes the rhymes and rhythms which have successfully been tried out in the centres, and also helping them to plan their own productions. Gradually CLT hopes to assist these schools to have their own stages by providing them with colourful stage sets prepared by the CLT Art Section, and later to help them build up their own wardrobes of colourful costumes for their own shows.

A scene from the ballet "Aban Patua"



A gay item by four and five-year olds

For the annual festivals and for more important performances the CLT has an ambitious scheme to build a Children's Open Air Theatre in Calcutta. Already the land has been acquired and a fund is being built up so that a stage worthy of the children's efforts may become a permanent feature of Calcutta's cultural life. At present the festivals take place in a temporarily erected theatre in the courtyard of Calcutta's museum, but the space is insufficient to seat all those who wish to attend.

Recently the CLT took a troupe of forty-five children from its main Training Centre to Delhi, and the

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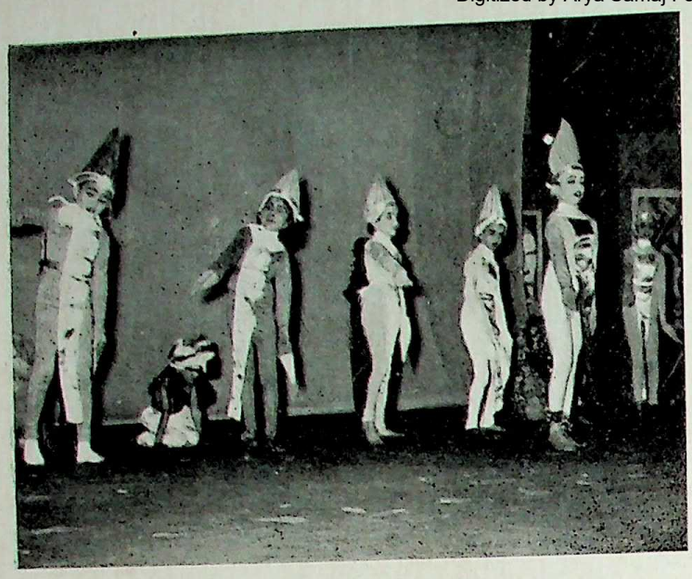


The dance of the paintbrushes

children of the capital flocked to see the performances. Press reports declared it a unique event. Never before had a children's performance been seen which had such precision and finish.

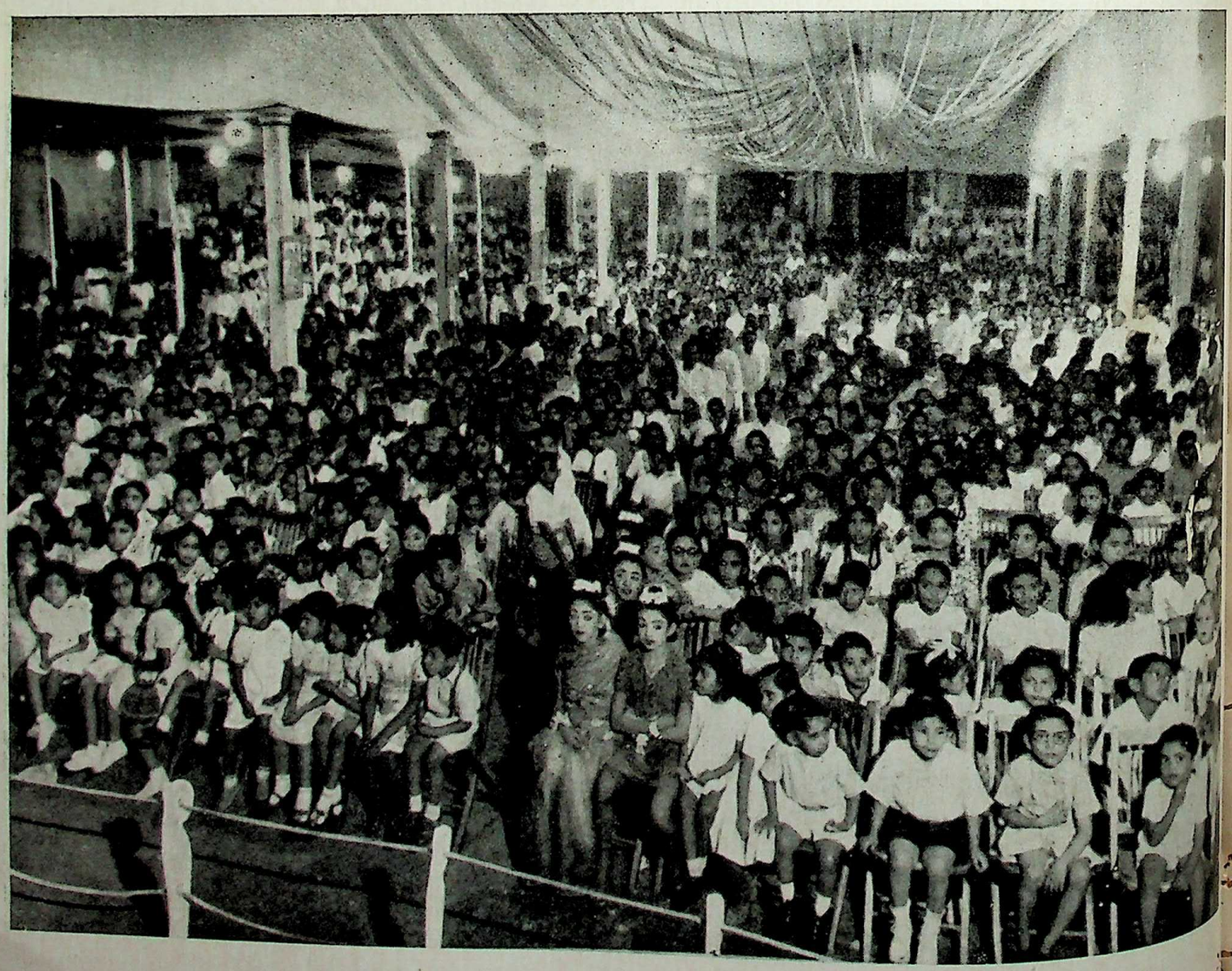
It seemed impossible to believe that the majority of the small ballerinas in the longer dances were under ten years of age, for they showed such spirit and dramatic expression combined with wonderful grace of movement and withal a sense of tremendous enthusiasm and co-operation.

In some of the shorter items there were only four or five-year old children, but all had the feeling of belonging. This is perhaps the greatest achievement of the CLT. In an endeavour to bring joy and happiness into the lives of the children, it has at the same time developed in them a sense of responsibility and co-operation which has surprised even the organisers.

What struck the visiting press correspondents most was that the children without any direction at all were rehearsing on their own in different corners of the hall, while the producer was busy explaining the programme to the visitors. The more advanced dancers help those who experience some difficulty in learning the steps—and it must be remembered that many of these children have no previous dance training.

They are so quick to learn and to develop the

Part of the audience at the CLT Festival in Calcutta



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Dressing the little birds—two of the smallest performers

rhymes and dances that the organisers learn from the children as they go along, and the singers and musicians —mostly young ladies in their teens—are put in their place by the dancers if they make a mistake.

Yet some of these children were shy and not particularly bright when they joined the centre. Some parents wondered if their schoolwork would suffer from two evenings a week spent at the centre, but school reports have shown quite the reverse. By developing the children's inherent sense of colour, rhythm and music, CLT has succeeded in developing their general intelligence also.

Though there are some outstanding dancers among them, these are never singled out for special honours. The whole group works as a team and is content to do so. The glory achieved by CLT is their individual glory also, and the opportunity for self-expression brings its own satisfaction.

Julian Huxley, one of the Directors of UNESCO, was a delighted spectator of two of the CLT performances during the Festival, and declared:

> "Mrs Huxley and I were both delighted and impressed by the two performances of the Children's Theatre which we saw. It is a notable venture, which I trust will be continued and extended. Two things struck us specially —first the way in which the children so obviously enjoyed their dances even when they were long and elaborate; and, secondly the remarkable talent revealed by a number of children—which in one little girl from Orissa amounted to genius. I suggest that the Children's Theatre be brought to the notice of UNESCO, through the agency of the Indian National Commission for UNESCO, with a view to UNESCO encouraging this venture, and promoting similar ventures in other countries."

And Sri Jawaharlal Nehru, speaking of the CLT performance which he witnessed in Delhi, said:

> "I must say I immensely enjoyed your performance. It was an hour happily spent which it will take long years for me to forget. I wish that the movement started by the CLT should grow so that children all over the country in large numbers could be brought to dance happily and enjoy themselves."

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Water and Power Research

T. V. Parvate

POONA has for long been recognised as an important centre of learning and culture. As the headquarters of the Southern Command and the second capital of the State of Bombay, its position has always been recognised. Its growth into a big city with a population of 600,000 including the two Cantonments at Kirkee and Poona, and the formation of a Corporation and a University have rightly added to its glory.

As the capital of the Mahrattas before the advent of the British, it had always been surrounded with historical glamour. The institution of the National Chemical Laboratory and the Penicillin Factory at Poona lent yet more glamour to it and the location of the National Defence Academy at Khadakvasla, only eleven miles from Poona, has added to its importance. It now richly deserves the title of the "Queen of the Deccan" which it had usurped long before.

One more institution which has made Poona a place of pilgrimage for lovers of constructive endeavour for national progress is the Central Water and Power Research Station at Khadakvasla, silently serving not only India but also the neighbouring countries.

It is not long that we read about the destruction wrought by the Brahmaputra floods in Assam. The river swallowed the 800 feet long embankment in Dibrugarh. It appears that as a result of the last earth-

A general view of the River Model Experiment Station, Poona

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quake the river has changed its normal course and is now a menace to the city of Dibrugarh, and tea plantations in Assam. Government of India is considering the appointment of a Brahmaputra Commission on the lines of the Sindhu and Ganga Commissions or the Mississipi Commission in America.

This problem of saving Assam's many towns on the banks of the Brahmaputra and tea plantations which secure considerable foreign exchange for India was presented to the Khadakvasla Research Station for solution. Models of the river with the embankments as they were, were reproduced at the station. The effects of the floods on the embankments are still under observation.

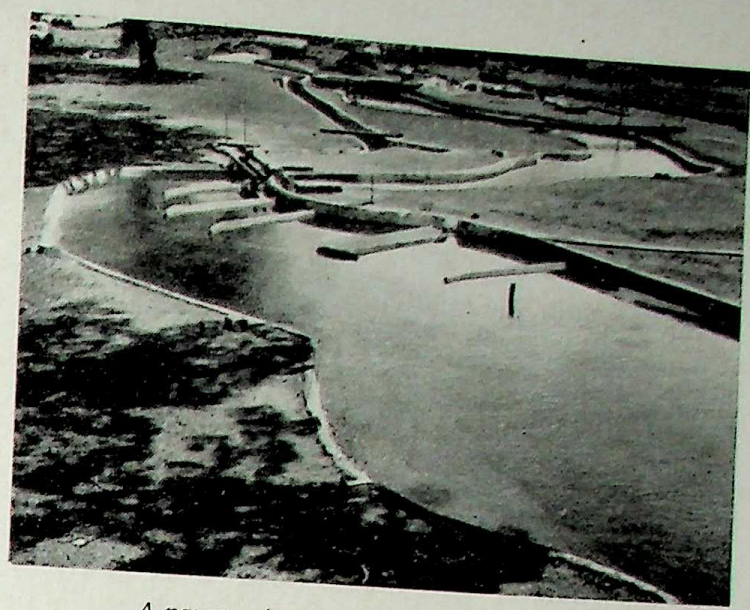
In the meantime the station suggested that if 27-mile-long dams of masonry were built on either bank of the Brahmaputra, her main course in the direction of Dibrugarh could be changed. The Government is now acting on this counsel and hopes to complete the work before the next rainy season sets in.

This is the latest important research work conducted at the Station. But during the last ten years, the Research Centre has found a solution to over 200 problems and has made 3,500 experiments in the process. The Central Water and Power Research Station is the largest engineering research organisation in Asia, where problems of hydro-dynamics, river training, navigation and soil mechanics as applied to the design and construction of river valley projects, harbours and navigable estuaries are being solved with the help of impressive and often ingenious scale models. The Khadakvasla Lake and the Mutha river nearby provide abundant water for experiments with the models.

As a result of the work done on these models, the Research Station has saved millions of rupees in the construction and maintenance of engineering projects throughout the country.

The work at the station has helped to define the scope and limitations of the method of using scale-models to solve engineering problems. If a scale-model reproduces the original problem reasonably well, the remedial measures worked out in the model are usually successful in actual practice. Repeated trials for several months are made to achieve as much certainty as possible.

In trying to solve the common problem of reducing the flow of sand into newly dug irrigation canals, workers at the station have used plastic balls of different densities to represent the grades of sand and silt. By this means they have been able to observe exactly where silting occurs the most and where eddies and erosion have formed.



A panoramic view of the Mu River Model

Some time ago, the Station was called upon to devise a temper-proof outlet from Government irrigation canals to prevent farmers from taking more than a fair share of the water. Improvements on certain old devices were worked out which ensured only a measured flow of water to a field. These devices were immediately adopted in parts of Bombay and the Punjab States.

During the last world war when Japan overran Burma, supplies for the army had to be rushed to Calcutta and from there to the Burma front. But the vital railway line connecting Calcutta with the rest of India runs across the Rupnarain river about 35 miles west of Calcutta. From 1938 onwards there was erosion on the left bank of the river which brought it dangerously close to the rail track. In 1943, it flowed about 1,500 feet away and threatened to cut off the only link left to feed Calcutta and the war front. A number of suggestions were made to maintain this link. Based on these proposals, scale models were made at the Central Water and Power Research Station at Khadakvasla. As a result of these tests, an 1,100-foot long wall was built at an angle of 60 degrees to the left bank of the river running upstream above the bridge. The groyne not only stilled the water flow that threatened the railway embankment and stopped erosion but also helped in the collection of silt alongside the railway track—exactly as it was anticipated in the model experiment. In 1950, six years after the construction of the spur, the river was flowing about 5,000 feet away from the track, the land in between having shoaled up to a depth of 12 to 18 feet with silt.

The Rupnarain model is but one instance of proving the utility, economy and ultimate efficiency of the designs of engineering structures through experiments on scale-models. Among numerous others are the Hardinge Bridge and the Garhmukteshwar Bridge across the Ganga which were brought back into effective service through model experiments.

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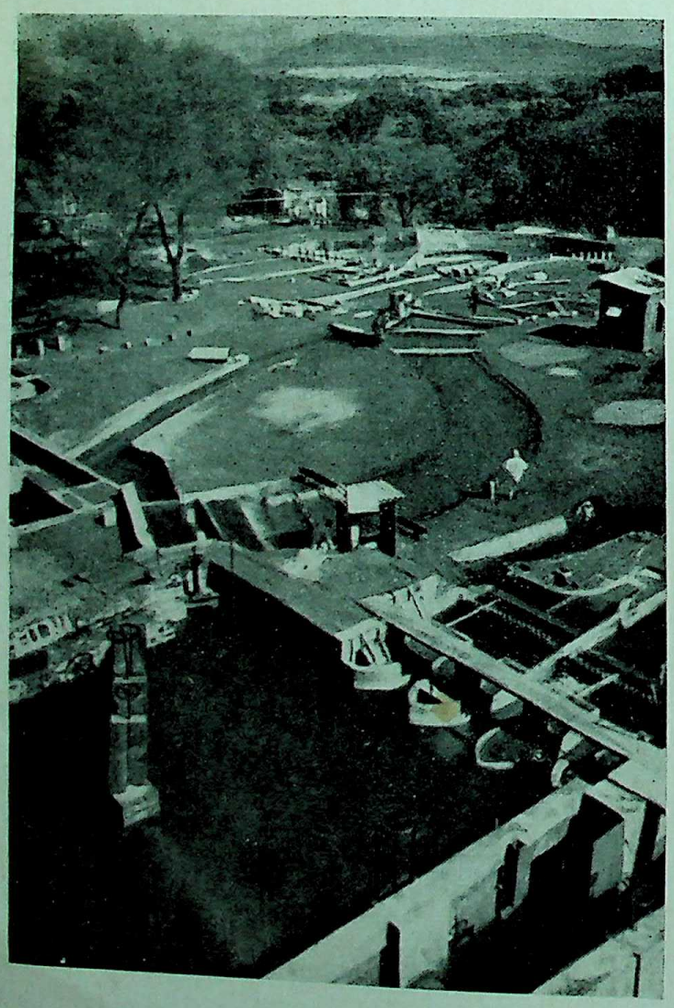
As in other professional fields, all are not agreed on the reliability of conclusions based on the results of hydraulic models. While some engineers swear by model experiments for hydraulic structures, others consider it dangerous to put too much reliance on them. But the truth lies between the two. That scepticism can at times prove costly is proved by what happened in the case of Sukkur Barrage right bank canals in Sind. Long before the scheme was completed, experiments at the Khadakvasla Station showed that the canals as designed by the field engineers would soon be choked with sand. To obviate this defect, certain devices were suggested but they were ignored by the Sind authorities.

Five years after the barrage started functioning, the Rice and North-Western Canals on the right bank silted up more than five feet. Several lakhs of rupees were spent on sand clearance. At the suggestion of the Khadakvasla Station, a new approach channel was constructed which effectively improved the flow in the canals.

In addition to having a knowledge of pure sciences like mathematics and physics, engineers experimenting on scale-models have to be gifted with intuition to be able to solve their problems.

River models at the Experiment Station



One of the most complicated problems now being studied at the Station is that of navigation in the Hooghly river. Every year about Rs. 50 million are spent on the removal of silt and sand along the ship channels in the Hooghly river between Calcutta and the sea. The flood tide from the sea is far more powerful than the normal river flow in the opposite direction. The salt water and sand that go up the channel recede only half as fast as their forward movement, resulting in much scouring and shoal formation. Because of the need for constant dredging and unceasing watch that has to be kept on the depths of the tortuous 100-mile course, ships from Calcutta take three days to reach the sea.

The main problem was to ensure a navigable channel which would need little or no maintenance. This was not easy, because most devices that worked well with one-way rivers were not suitable for the two-way flow in estuaries; for what is done by the flow of the river is often undone by the ebb of the current from the sea.

The first task before the Khadavasla Station, therefore, was the building of an accurate scale-model that would reproduce the direction and force of the flood and ebb tides, the sand islands and eddies, the tendency to silt heavily at certain points, etc.

It took 18 months to obtain these conditions in the model. It involved the designing of a special tide-generating apparatus and now even the bore tide, which follows the ebb tide, occurs in the model with amazing accuracy.

Experiments with this model have begun to yield useful and promising results. For example, it was found that an oblique spur, 1,300 feet long, placed across the stream at a certain point minimised the force of the flood and ebb tides along one of the banks. This will keep a considerable length of channel open for shipping without the need of dredging it.

Problems of the Madras, Manglore, Kandla and Cochin harbours which are less complicated but equally vital to the nation are also being studied at the Station. Models of these ports have been reproduced for constant observation.

Extensive research is carried on by the Station on various subjects relating to the suitability of indigenous soils as binding materials, as load-bearers or for soil cement and the analysis of the geological structure of dam sites by creating light, artificial earthquakes. The line of stress and strain in structures and the estimation of water flow in rivers are some of the subjects under constant study at Poona. They all aim at improving the designs of new or old structures.

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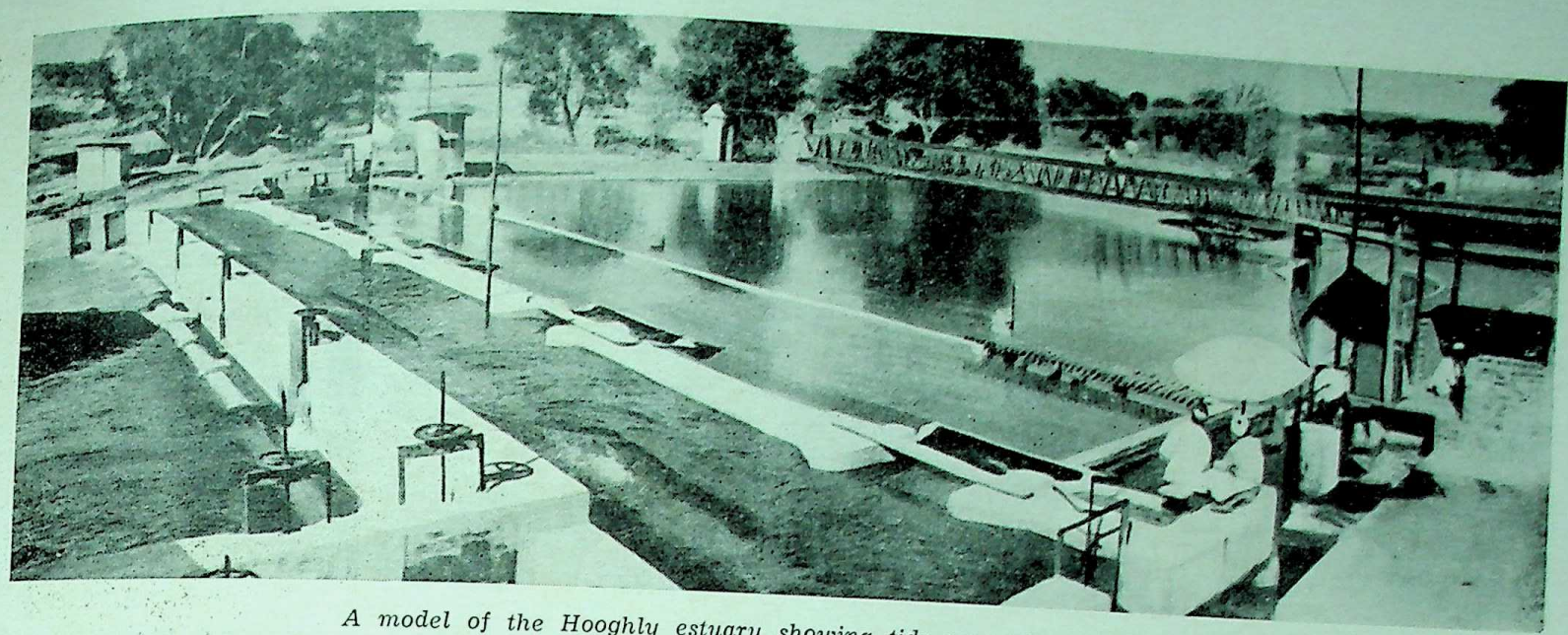

A model of the Hooghly estuary showing tide-generating arrangements

The Water and Power Research Station began its work modestly in 1916 as a special Irrigation Division of the Bombay Public Works Department. Local problems of land drainage, reclamation, etc., engaged its attention. Soon, the Bombay Government found that the Research Division could put forth concrete solutions to problems, saving time and money by largely eliminating doubts, indecisions, controversies and failures.

The Division was promptly raised in 1920 to the status of Hydro-dynamic Research Station. During those days, the models were situated on a distributory of the main Right Bank Canal of the Mutha River near Hadapsar. Despite limitations, it tackled problems connected with the design and construction of the Sukkur Barrage and its canals.

Soon the Station was called upon to provide solutions to a wide variety of engineering problems. But the water supply for working models was inadequate at the distributory. From 1925, therefore, models were built on the main Mutha Canal below Lake Fife at Khadakvasla and by 1934 the entire Station was moved to its present site.

As the utility of the Station was increasingly realised and the demand for its services grew, the Central Government decided to take it over in 1937. New fields for irrigation and river-training research were added to it and the Station was renamed Indian Waterways Experiment Station. Ten years more of its career called for further expansion and a new scheme of re-organisation and establishment of new branches was sanctioned by the Central Government. As the Station grew new branches of research including navigation, soils, materials of construction, statistics, physics, mathematics and hydraulic machinery were added to it. In 1948, it became a wing of the Central Water and Power Commission. Now it has been suggested to rename it as the National Water and Power Research Station.

A visit to the Station gives one the impression of having visited all important irrigation and power projects in India, river valleys, ports and harbours. The miniature models remind one of Gullivers' travels and his exploits in Lilliput.

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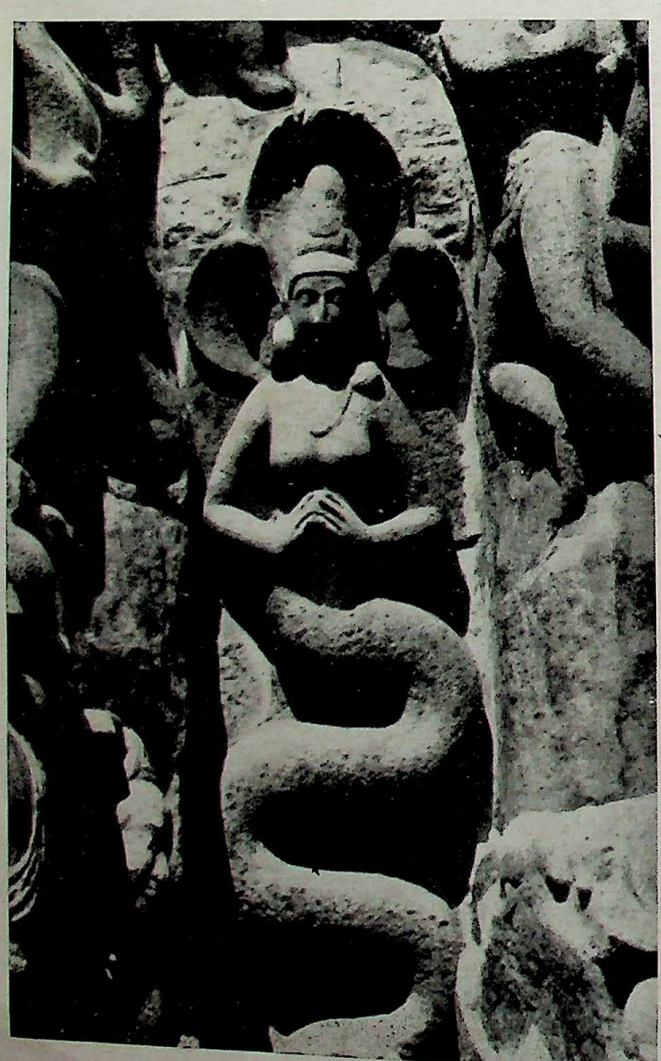
Motifs in Indian Sculpture—Animals

K. Khanna

THE tradition of Indian Sculpture has not been a continuous one as is often imagined. The successive invasions to which India was subjected prevented an uninterrupted growth. The artists of each epoch had to search for and create their own styles in conformity with the changing ideals of their age. There are, therefore, many stylistic traditions in Indian Sculpture. There is, however, a common thread which becomes apparent to anyone looking at the different styles in Indian Sculpture. I refer to its religious significance. Sculptors and painters were integrated in the societies they lived in and interpreted the ideals of their societies. As the inspiration of the societies was religion, it was but natural that the men who made the Sculptures should choose religious themes and work in the service of temples.

The serpent goddess of the nether region ascending from the Ganga, (Mahabalipuram)

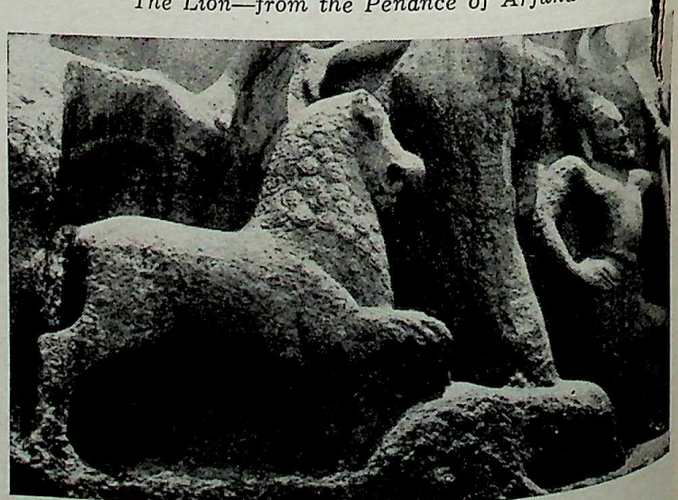


It is fortunate that the religion they interpreted had a comprehensive outlook. Hinduism does not merely concern itself with the good and the bad but tries to understand the nature of existence. To the Hindu an animal is but an aspect of the soul which can assume different shapes.

An artist holding such a view cannot but have respect and reverence for all his fellow creatures. He knows that the life force is the same whether it manifests itself in an elephant or an ant. In the Hindu Epics, animals and birds converse freely amongst themselves and with human beings. By such conversations the Epics do not descend to the level of fairy tales because the animals do not pretend a human attitude but express what is peculiar to them.

In sculpture, animals and birds abound just as they do in the Epic poems. They are portrayed with the same imaginative sympathy and understanding. Each individual creature has its place in the Universe a

The Lion—from the Penance of Arjuna



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Kiratarjuniya; *part of rock-cut relief, Mahabalipuram*

A monolithic lion from Mahabalipuram

forms part of a metaphysical conception. Just as the poets of the Epics realised the essence of each creature they portrayed, so did the sculptors. They were not interested in depicting the individuality of each animal but brought out its ideal shape. For example, if one may say so they portrayed "elephantness" not elephants. One of the finest examples of animal sculpture can be found in Mahabalipuram. A huge rock cliff bears witness to the work of a band of sculptors who, with remarkable consistency of vision, gave life and meaning to the rock, carving on it the story of the birth of Ganga.

All the creatures of creation are present here. A lizard clings to the branch of a tree, and is barely visible. There is a family of mice. A pair of deer are sculptured with great sensibility and understanding. The gentle scratching peculiar to these animals has lost none of its grace nor has it become rigid though

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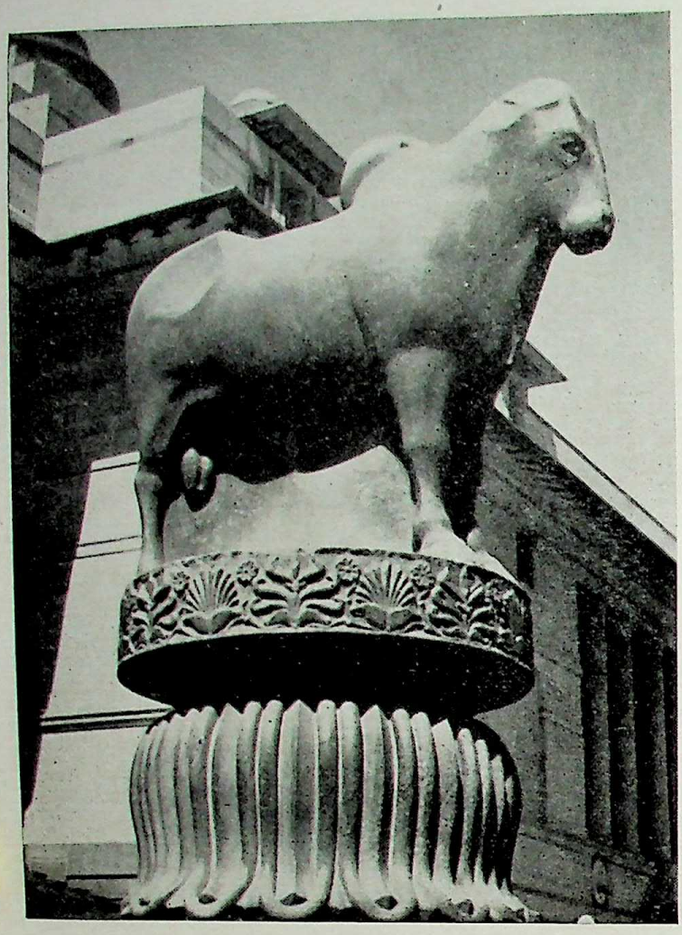
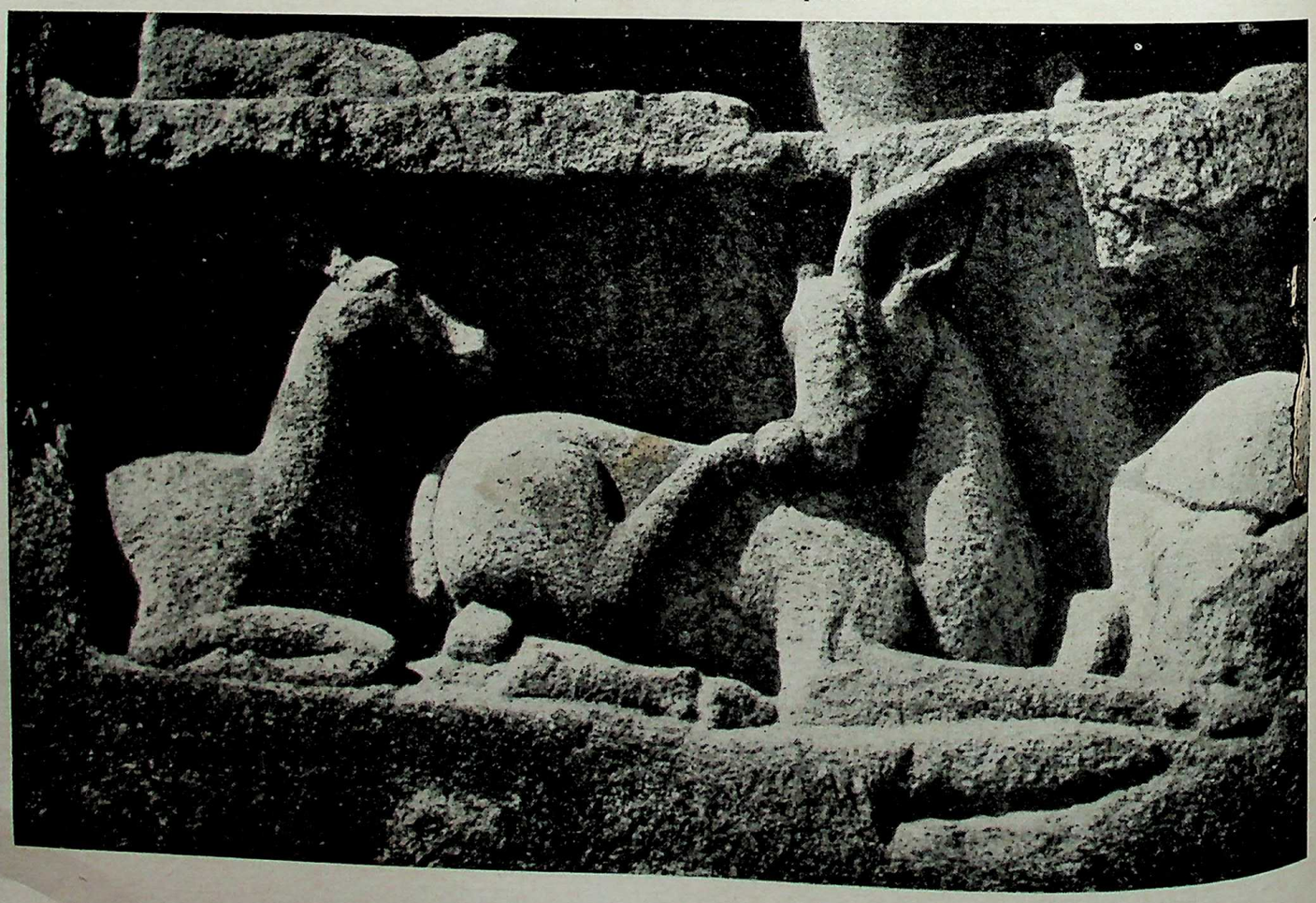


Asokan Bull, third century

depicted in stone. There are lions, rampant and in rage, contrasting with the flying "Apsaras" who glide above them. There are life-sized elephants who walk with typical grace. There is another cliff, not quite as large as the one already described, which seems to have been a prelude to the main work. Though the sculpture on this cliff is of a lower order than the work done on the main cliff, the treatment of the elephants is quite good. The sculptors understood the nature of the material they were working in and succeeded in imparting the weight of the rock to the body of the carved elephant.

At its best Hindu sculpture was never literal. The sculptor thought in terms of his medium and his work represents the fusion of what is commonly called "thought content" and "form". This kind of labelling though conducive to logical thinking, does not permit a true understanding of the creative process. An artist never makes these distinctions. His personality is like a crucible into which are mixed his philosophies and beliefs, his emotions and his reactions. Time and again the contents of the crucible pour out through the senses of the artist into the medium he is handling. There is

Famous pair of deer from Mahabalipuram



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The statue of a horse, Konarak

action and interaction of the amalgam from the crucible and the medium till both the amalgam and medium are transformed into something which becomes in a sense, independent of both. A work of art is born.

This co-ordination exists in the great periods of art. Degeneration sets in when there is a dislocation of this process. When the feeling for the medium is lost then what is produced is not great art. But a second hand vision which can at best merely serve to illustrate the original.

The subject of animals is such as to pose very different problems to the writer and the sculptor. They may both have a common religious attitude to them but their treatment, if it is to be significant, has to be different. The Epic poets made their animals talk to reveal their natures. The sculptor's approach was necessarily visual, and he relied for his effect chiefly on modelling.

This is indeed what the sculptors in Mahabalipuram did. The baby elephant falling on his nose while walking under his mother and the family of three monkeys are instinct with a plastic quality that relates them intimately to our own experience.

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Short Story

*Mallamma's Mahabharat**

Betgeri Krishna Sharma

WHAT a wonderful phenomenon this life is. If we go a little deeper into the inner vaults of the life of an ordinary human being, how many pictures of pain and pleasure, what variety of experiences of happiness and sorrow do we see! In case all these were made visible to the naked eye, I think the progress of this universe would not have had such a chequered career. Who knows the objective of the Maker of this universe in keeping such feelings unseen!

Mallamma is the name of our housemaid. She has been a member of our household for the last fifteen to twenty days. Finishing the work in her own dwelling, and looking after the arrangements of food for her son, she used to reach our place by about seven in the morning. It is just the time for our young lady to be up in her bed. For Rukmini the coming of Mallamma has been a boon in the sense that she has been relieved of half the duties of the household.

As is natural with newly-weds, Rukmini and I used to be quite gay and happy; Mallamma would look at our joyous life, with admiration and on occasions she, too, would join us in our laughter. But, at times it looked as if she were brooding over something. She would enjoy our jokes outwardly and then suddenly would heave a deep sigh. More than once on such occasions she would say to Rukmini, "Our Kashi too was just like you, Madam".

She must have been talking with Rukmini, in my absence, on a number of domestic issues interesting to both of them. In course of time I could see on the part of Rukmini a distinct look of sympathy, kindness and affection for Mallamma.

Last Sunday I did not have any office work to do at home. I was relaxing in the drawing room. Indulging in the pranks of an idle mind, I called Rukmini as if I had some urgent errand on hand. She came out of the kitchen in all anxiety and stood in my presence. But when she found out that it was but a meaningless mischief, she left immediately. While passing, she cast a loving glance at the baby that was on the lap of Mallamma and caressed her.

In all respect and admiration Mallamma said to me, then :

"As I see you happy and merry, I am invariably reminded, sir, of my Kashi and Shivalinga". All of a sudden I thought of Kashi about whom I had heard a lot and asked Mallamma,

"Who is this Kashi—Mallamma?"
"My Lord! she is the wife of our Shivalinga".
"I see! But who is Shivalinga?".
"Don't you know? Shivalinga—my son?"
"Oh! your son's name is Shivalinga. Then, is he married?

This question upset Mallamma suddenly. In a tone of distress she said, "He was married and led a happy life. But then everything was swept clean. What is the use of people like us? We are living just because we cannot die."

Mallamma was in tears. I was also visibly moved by the sadness that pervaded her. Consoling her, I said, "Where is your daughter-in-law?"

"She is not alive, my lord! She died a year ago".

"Oh what a pity! How did she die?" I asked her casually.

"How can I describe it to you? My Kashi was one among a million girls...."

"Was there any quarrel Mallamma? The usual mother-in-law—daughter-in-law affair?"

"Heavens forbid! She was my own brother's daughter, born and bred up in our own household. How do you think I would differentiate between my daughter and my brother's? My goodness! If there were any mother-in-law who would tease such an angel as Kashi, she must be a devil indeed!"

"Then . . . . were there any strained relations between the husband and her?"

"How can anyone ever think of that! Do you think anybody will believe if I say that you and milady are not carrying on well with each other. My son Shivalinga sheds tears every day, saying that his life is now empty after the loss of his wife Kashi . . . ."

* Translated from Kannada into English by H. S. Patil.

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As Mallamma was intently describing the unique qualities of Kashi, her daughter-in-law, I was growing more and more anxious to know the cause of Kashi's death.

"What then did happen to your daughter-in-law?"

"That is all a story of Pandavas' Vanavas. You will only get annoyed by listening to it?"

I could then see through my mind's eye the pitiable picture of some other old woman like Mallamma. Perhaps it might have been the figure of Kunti, the mother of Pandavas, referred to by Mallamma. I drew up a chair, placed it in front of Mallamma and started talking to her.

"Mallama, I am getting impatient to hear the story of your Kashi : I do not know why. Would you kindly go on with it?"

"I think you should excuse me, Sir; it is a story neither of Gods nor of Saints. But this much is certain that I feel consoled when somebody listens to that woeful story with sympathy and patience.

"Our Shivalinga and Kashi were living a happy married life. They loved each other so much that they were often referred to as an ideal couple. They always took their food together. If Shivalinga was late in returning from the fields, Kashi would never touch her food, even if I pressed her to take some. The same was the case with Shivalinga and he, too, would not touch his plate of food till Kashi was there to share it with him. At times all this used to worry me, but who paid any attention to that. I too had a secret feeling that they should take their food together. It was such a happy sight to see them in each other's company.

"And Kashi was a rare beauty indeed! She was really more exquisite than the best made piece of art. If she were walking about in the house with her thick green sari and her spotted choli, I would feel like kissing her intently. And her smile lit up her face like an eternal flower in full bloom !

"Of course, we were never so rich as to possess plenty of lands and other property. All that we could boast of was a strip of land. But with a pair of fine bullocks that we had, we tilled enough land rented from persons like you. Shivalinga was quite content with life. God, however, willed it otherwise and before long the family was done to dust."

She could hardly control her grief. But, I was all attention.

"The farm next to ours belonged to Rudrappa, son-in-law of the Patel of our village. There were all kinds of rumours in the village about this Rudrappa but since he was a big man, the villagers were afraid of him.

"Kashi would also help us on the fields either by bringing fodder or keeping a vigil on the standing crops. Our women cannot sit idle at home like your Brahmin ladies do. Our lands were scattered in a number of places and all of us had to keep a watch on one or the other. But I would ask Kashi to go to our own field which was nearest to the village.

"Kashi would explain to me often that I should go to the home farm and that she would go to some other. I thought she said this only out of consideration for my age. And when I would decline her request she would look pained. She would, however, go to the farm without uttering a word. One morning, at last, she informed Shivalinga and myself.

"Our neighbour Rudrappa talks to me some nonsense. I would rather prefer to go to some other field." It was then that I realised the meaning of her earlier requests. Both Shivalinga and myself immediately decided that she should not go to any farm and remain indoors. This happened during the last harvesting season.

"As days roll by we forget so many things. Soon we, too, forgot all about Rudrappa and Kashi was overwhelmed with the joy of getting her first child.

"Last season was definitely encouraging. Shivalinga was on the farm with the pair of bullocks. I was pinned down to bed with malaria. Even then I would prepare food for all. Kashi had to go to our farm early in the morning, to scare away the birds. It would be midday before she returned. Many a time she had to go without food since she had to take some for Shivalinga in the fields. With the days of Kashi's confinement drawing near she could neither get proper rest nor regular meals. How can we poor people afford to entertain a servant, even if we want to? For days on end Kashi did all the work, without ever complaining. One night she told me:

"'That Rudrappa is again after me, mother. I am getting rather frightened. I think I should stop going

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to the field from tomorrow.'" I was at once stunned by these words of Kashi. After a while I said:

"You see Kashi, you have to go there tomorrow to inform Shivalinga. From the day after you will not go. Let him manage with a servant, if he will."

"Next morning, she got up at the break of dawn and reluctantly walked out, to the field. I wanted her to stay at home, but how could I do it? I was an invalid, and the farm had to be guarded against pests and birds. If the pests ravage the standing crop, we have nothing to eat for the year. It is poverty which compels us to do all this."

"As usual Kashi returned home by midday. While she was removing the load of grass from her head, I noticed a tremendous change in her face. She was all pale and anaemic. Without uttering a word, she went inside and collected some food to take to Shivalinga. Even when I asked her what the matter was, she just put on a superficial smile and walked out of the house, hungry.

"I could see that Kashi was lost in herself and had forgotten to take the vegetables for Shivalinga. When I pointed that out to her, she just rolled the vegetables up listlessly and stepped out. I asked her to tell Shivalinga that she would not go to the fields tomorrow. She did not even turn back to listen to me. I could do nothing but stay helplessly in my bed."

* * * *

"It was about dusk. I was anxiously waiting for Kashi. All of a sudden Shivalinga came in. I was wondering what brought him home at that time. But he said in a fit of fury:

"Do you all think that I should go without food today?" I was shocked.

"How can it happen? Kashi left with your food long ago. Has she not reached the farm?" Shivalinga was much surprised.

"What? Where has she gone then? I waited and waited but there was no sign of her." This came like a bolt from the blue. I could not say anything. I was suddenly in tears. In utter grief I said:

"Kashi went from here at the usual time. Kashi—my Kashi...."

"How is it that she did not reach the fields then," said Shivalinga and turning back immediately he disappeared. I sat there motionless expecting that Kashi would arrive any time. I have no knowledge when I put on the lights.

"The whole village had gone to sleep, but there was no sign either of my son or my daughter-in-law and there was no one to give me any information about them. At the slightest sound I thought somebody was approaching our house. I could not restrain my sorrow; I broke into tears. I was completely exhausted and must have spent those hours in a stupor. I had a similar experience on the night of my husband's death.

"It was the dead of night when some two or three persons escorted Shivalinga home. Shivalinga burst into tears and asked me 'where have you sent my Kashi, oh mother!' I was speechless. I enquired of those who had come with Shivalinga about the whereabouts of Kashi. They could only tell me that they had searched every nook and corner of the village and yet could find no trace of Kashi. The torment was unbearable to me and I soon went into a swoon.

"Next morning all of them went out again in search of Kashi. They left Shivalinga behind on the plea that someone was needed to look after me. The whole village turned up to help us and enquire about Kashi. What could we tell them? Shivalinga was sitting there like a statue, all the time."

"It was after about a couple of hours that I heard someone talking loudly on the road.

"Poor girl Kashi, the wife of Shivalinga, has jumped into the well of our flower garden."

"Shivalinga heard these words. He stood up. 'My Kashi....jumped into the well!' He went out like a dart and many others followed him blindly. I do not know how I gathered that much strength; I too reached the well, limping.

"Oh! it was a ghastly sight—that of Kashi's body! Shivalinga was weeping bitterly with Kashi's head on his lap. It was a heartbreaking scene and I, too, wept like a child. But all that could not bring our Kashi back. She was dead and her charming body, looking like a phantom, was swollen with water."

"Of course, the Panchanama and other formalities had to be gone through. The Patel came, the Shanubhoga came and so came the Panchas. The village peons were there already. They had all assembled there as if for a marriage party. They were laughing and talking. They were all enjoying their beetles and tabacco, their nuts and pans. The headman of our village—Patel—Rudrappa's father-in-law, said tauntingly to Irappa the merchant, with a biri in his mouth; "This is just the fate of these daughters-in-law. In vain they kill themselves. And what fun is it that other members of the family should tease and harass these girls while they are living and cry so loudly when they are dead. It is all such a strange world!"

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The Painters and Sculptors of Orissa

Philip and Halina Zealey

ORISSA, which is one of the lesser known States of India, lies on the east coast between Bengal and Madras. It has a rich artistic heritage. This came to its greatest flowering between 600 and 800 years ago, when the richly decorated temples of Konarak, Bhubaneswar and Puri were built. Even today they remain amongst the greatest of India's architectural and sculptural treasures.

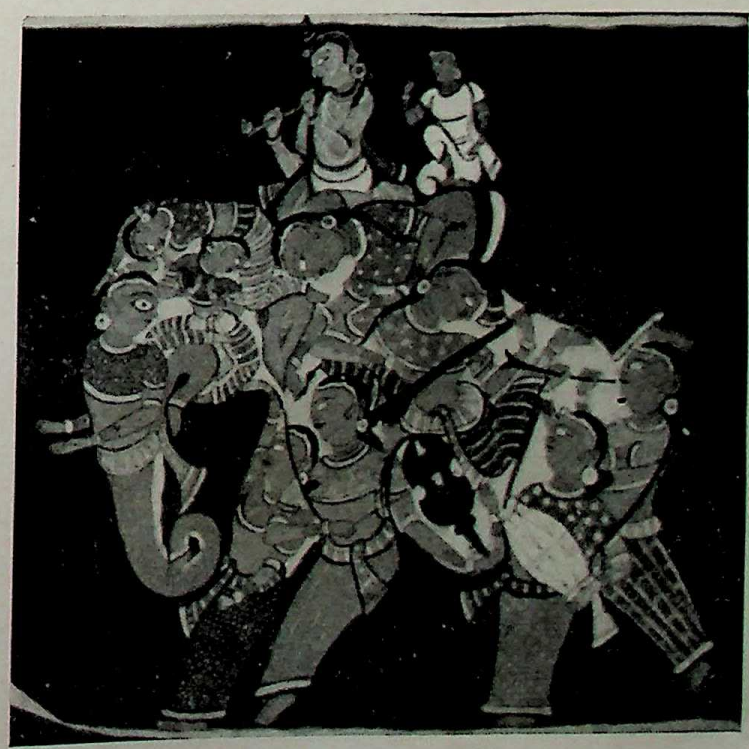
Two years ago, in connection with a project for general rural development in Orissa, we came into contact with two groups of religious folk artists who belonged to castes directly descended from the builders and decorative artists of the Orissan temples. The first group were the *chitro-karo* or painters. Their traditional work was the decoration of temples, of community gathering places and even of village houses, with pictorial representations of the Hindu gods and of stories from the Hindu scriptures. The second group were the *pothuria* or stone workers. Originally they were architects as well as sculptors and each family's most treasured possession is a palm leaf manuscript containing detailed plans and instructions on temple building. As palm leaf generally has a life of only about 100 years, it has to be periodically re-copied on to fresh palm by the head of the family in every third generation or so.

Chitro-karos and *Pothurias* are to be found in various parts of Orissa but the largest group of them have settled in the pilgrim town of Puri and its surrounding villages. Of recent years, there has been a substantial decrease in requests for their services and most of them were forced by economic necessity to seek other forms of work, usually of a mental or labouring character.

The *chitro-karos* paint on a material manufactured by themselves. The base is worn cloth, usually old sarees or dhoties, which, after stretching is impregnated with a paste made from tamarind seed. Powdered chalk is then added and well rubbed until a smooth surface is obtained. These "canvases" are then cut to the required size which normally range from a few inches square to about 18 x 20 inches. We did see, however, one very large canvas about 6 x 14 feet intended for a temple mural. The colours are dyes extracted from local paints. The process by which both canvas and colours are produced is a closely guarded secret of the caste. Brushes are made from various animal hairs and for the most delicate work, brushes of rat hair are used. Cocoanut palms abound in the Puri district so it is not perhaps surprising that cocoanut shells are used as paint pots. The narrow veranda outside his village house serves as studio and the painter works sitting on his haunches with his canvas lying on the ground or supported on his knees.

Almost all the art is inspired by Hindu religious literature. Scenes from the life of Krishna, stories from the Ramayana form common subjects. A few depict incidents in local Oriya mythology and there are occassional deviations such as an imaginative and amusing hunting scene. The purist may well say that this work is a craft rather than art as the paintings conform to certain traditional rules in relation to borders, symbolic designs, use of colours and, of course, subject-matter. None the less, there is a great deal

Krishna riding an elephant composed of gopis



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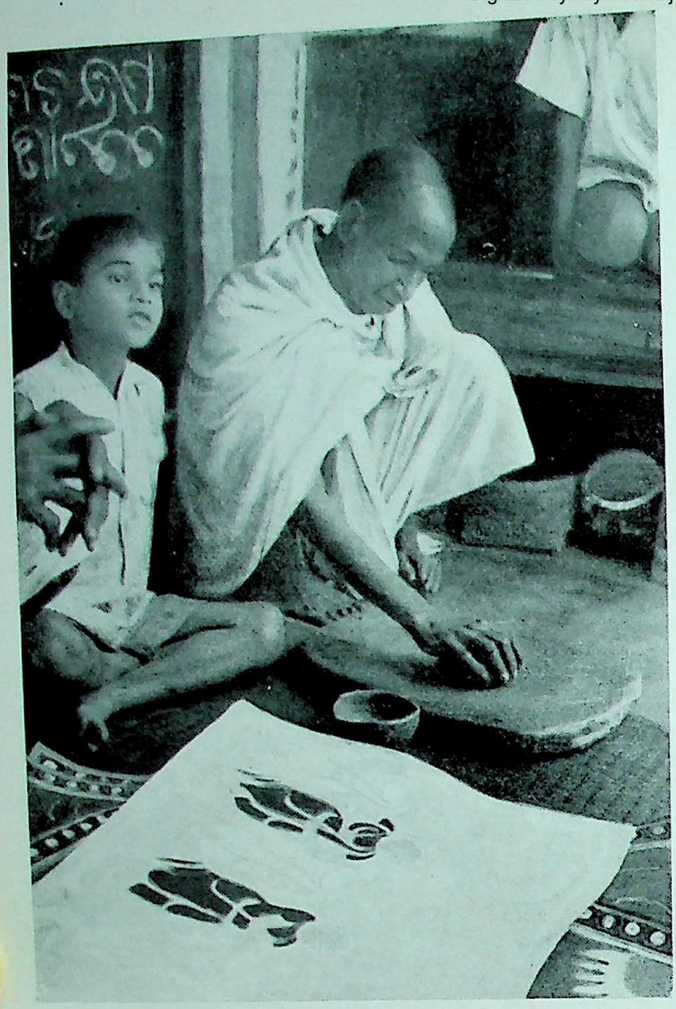

The painter preparing his colours

Hanuman—painted wood carving

of variety in the treatment of each subject and each painter has his own particular style. Some of them take infinite pains over details and delight in providing four or even more finely worked borders for their pictures. Others prefer bold sweeping outlines and depend on colour contrast for effect. It is the latter school of folk artists who have greatly influenced Jamini Roy, the Bengali painter.

Painted pottery

The car festival of Lord Juggannath

Wall plaques

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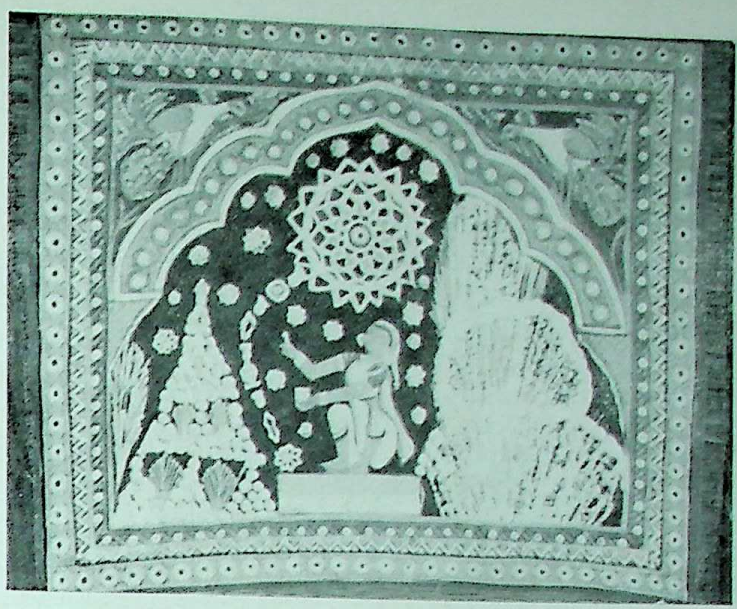
Raban—the ten-headed monster



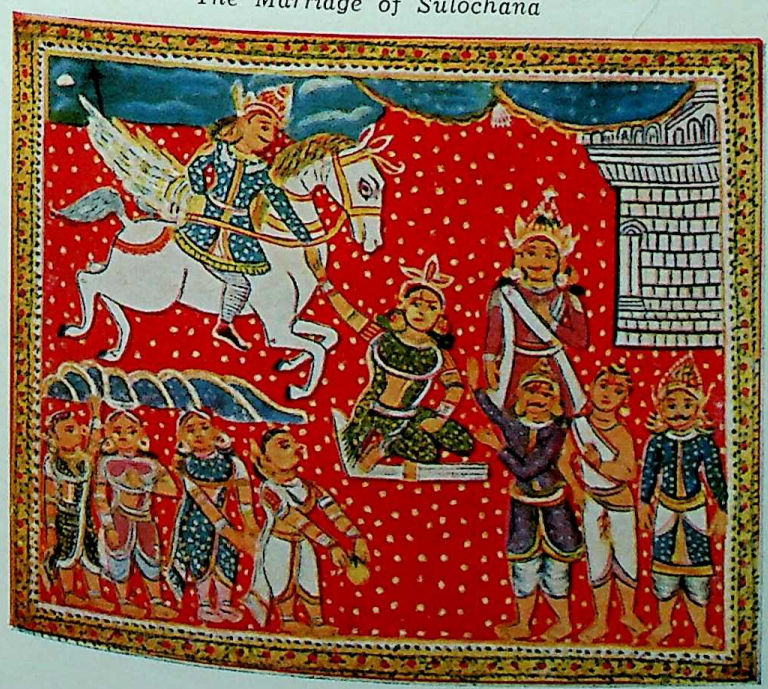
Festival time

After making friends with three painters who were still at work, we arranged for some of their best work to be exhibited in Calcutta, Delhi and Bombay. Here they aroused considerable interest. Today, some 30 painters have been able to return to their traditional calling and sons have started to study painting under their father's guidance.

(*Continued on page* 29)

Legend of Lord Juggannath and the milkmaid

The Marriage of Sulochana



The painter with prize-winning wall plaque depicting Ganesh

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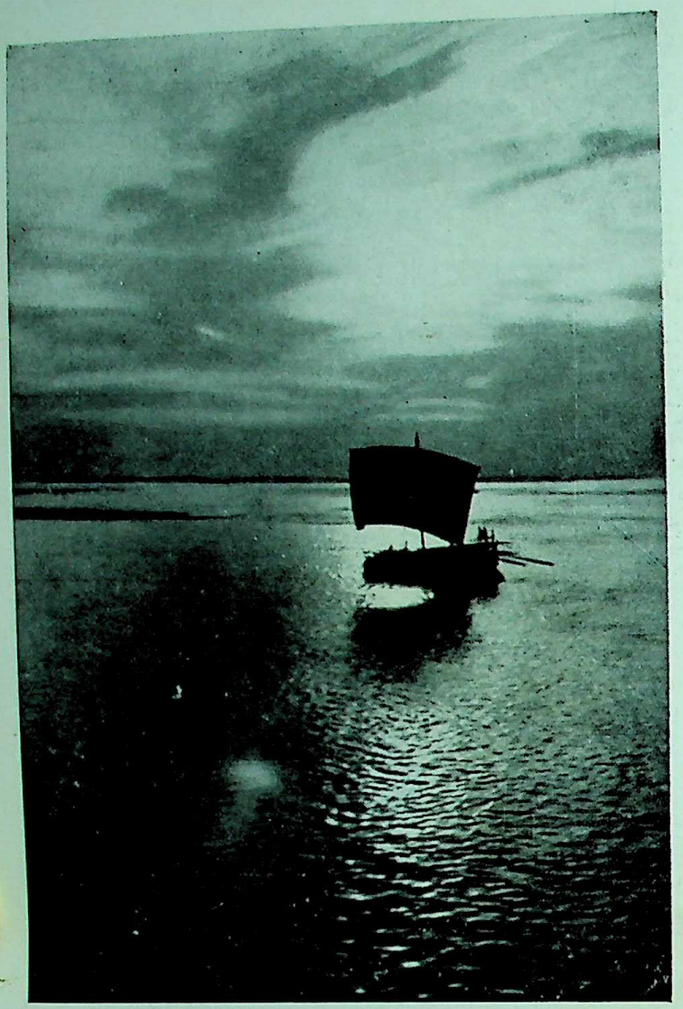

The setting sun over the sail of a boat

Rivers of India

The Brahmaputra

Padmini Sen Gupta

THE Brahmaputra, son of Brahma, one of the mightiest rivers of India, fed by the divine and eternal snows of the Himalayas, has lately been much in the news. The havoc it has wrought and the efforts it has made to try and wipe out such an important town as Dibrugarh and hundreds of villages, has placed the river on the map, so to speak. Not that this powerful water-course has ever been tardy in creating sensations.

It has whimsically and constantly changed its course, and the frequent earthquakes in Assam have not helped to regulate its flow into any form of order. For instance, we have recently read in the papers that the river was five miles away from Dibrugarh in 1911 when it first started erosion at that point.

It altered its course in 1927 and gradually edging south it came almost next to the town where this year it stretches five miles broad at Dibrugarh and nearly wiped the town away with its angry flooded waters. We are also told that the great earthquake of 1950 caused tremendous topographical changes in Assam and also in the river course.

The changes were abnormal as great landslides in the hills brought down large quantities of silt into the tributaries of the Brahmaputra and caused the main river to react violently. It is feared that the Brahmaputra will continue to be erratic until it has found a new course to suit it. In fact, since 1950, the Brahmaputra has been a problem river during the flood period. "The worst affected area lies within the reaches between Dibrugarh and Tezpur, a distance of 171 miles. It is during the floods that the crest of the vast shoal, caused by the phenomenal silting of the channels in the upper reaches of the Brahmaputra and its tributaries, is steadily moving downstream to meet with the next big influx of silt from the Subansiri."*

Many other earthquakes had already left their mark in Assam and changed the course of the Brahmaputra. In 1548 "The earth opened in many places and sand, ashes and pebbles were poured forth." The great earthquake of 1897 again disrupted the river. During the rains the flood discharge of the river is something stupendous. The Brahmaputra, therefore, is a unique and colossal river, changing the face of North-Eastern India if and when it pleases; its size and utility, however, are of great importance to the country.

Due to its Tibetan origin, its early history is shrouded in obscurity. It is said to be connected with the Tsan-Po, (which actually is the Tibetan name for the Brahmaputra), the great river of Tibet, which exudes through the Dihang into the Brahmaputra in the Assam Valley.

The source of the Tsan-Po is in 31° 30′ N. and 82° E, near Manasarowar, close to the upper waters of the Indus and the Sutlej. Though the Tsan-Po has been traced for many miles east of Gya-la-Sindong, up to 150 miles from the Assam frontier, it has not been possible to find exactly where the Tsan-Po and Brahmaputra actually meet. At one time the Tsan-Po was muddled with the Irrawady; but later it was thought that the Irrawady was a tributary of the

*Journal of the Institution of Surveyors—Vol. II, No. I page 50.

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Tsan-Po, flowing into the plains from the west of Sama into Burma. The Gazeteer says: "But Mr. Needham in 1885-6 walked from Sadiya up to the Brahmaputra to Rima, a village east of Sama and proved that the river at Rima and the one that flowed past Sadiya were the same. The Tsan-Po has no inlet to Burma and is the Brahmaputra. The channel through the Himalayas is the Dihang which falls into the Brahmaputra from the north."

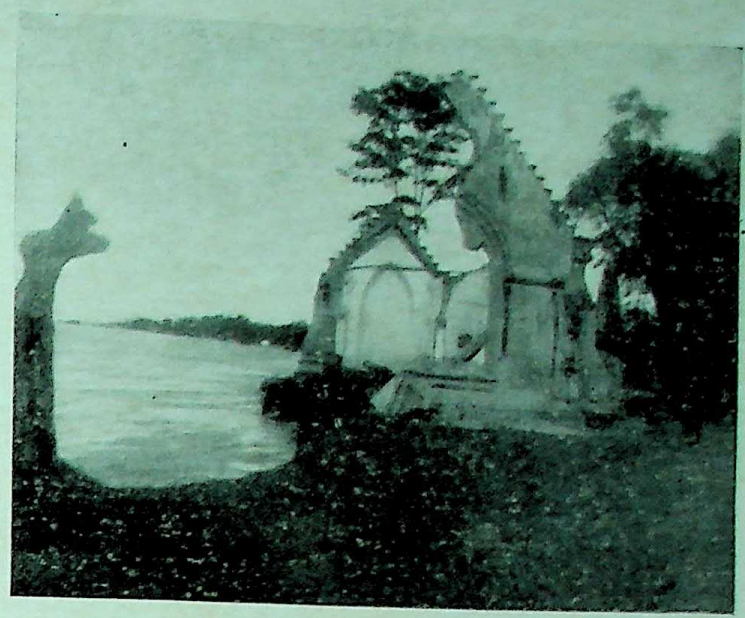
The Ganga and the Brahmaputra have their sources within a hundred miles of each other on opposite sides of the Himalayas. The two great rivers after following their courses, join at Goalundo at 23° 51′ N. and 89° 45′ E. The Meghna estuary of Bengal is thus formed, for the combined river splits into branches, forming the Meghna and the Hooghly as the extreme arms of the Delta with countless channels in between, known as the Nadia rivers.

At the point where the Dihang joins the Brahmaputra, the river is at times called the Lohit. Near Sadiya it receives the Noa Dihang from the south and Dibang and Sesseri from the north. To the west the tributaries of the Brahmaputra are Subansiri, Bhardi, Dhansiri, Barnadi, Manas, Sankosh, Dharla and Tista on the North Bank and Burhi, Dihing, Disang, Dikho, Jhanzi, Dhansiri, Kulsi and Jinjiram on the South Bank.

The long Bodo domination of Assam is evident from the many names with the prefix *di* or *ti*. These are most pronounced in the names of the rivers—most of these are tributaries of the Brahmaputra, such as Dibru, Dikhu, Dihing, Dihang, Dibong, Disang, etc. The old names are disappearing in certain cases, such as the name of the Dichu river has been changed to Jaldhaka.

In the days of Ahom rule, the Brahmaputra itself was known as the Ti-lao, which was possibly the origin of the name Lohit or Lau-hitya (red). The waters of the Brahmaputra are said to be red because Parasurama cleansed his bloodstained wounds in it. Many names in Assam have aboriginal connections. The Kosi river, for instance, was said to have derived its name from *Khussi*, a Newar word for river; but its Hindu tradition connects it with Kusik Raja. The Tista also had its origin from the Bodo prefix *Ti*, though it is said to have been derived from the corruption of *trishna*, according to Hindu tradition, meaning thirst, or *trisrota* (three springs). Ahom influence seems to have been less than the Bodo, though in the extreme east the name for river, *nam*, is found in Namrup, Namtsik, and Namsang. The Ahoms were really the dominant race and it is strange that their toponomy is less than that of the Bodo tribes, which goes to prove perhaps that the latter ruled for a longer time.

The Brahmaputra is no longer obscure below Dibrugarh; and in its rapid course it forms many *churs*, or islands, due to the oscillation of the river from bank



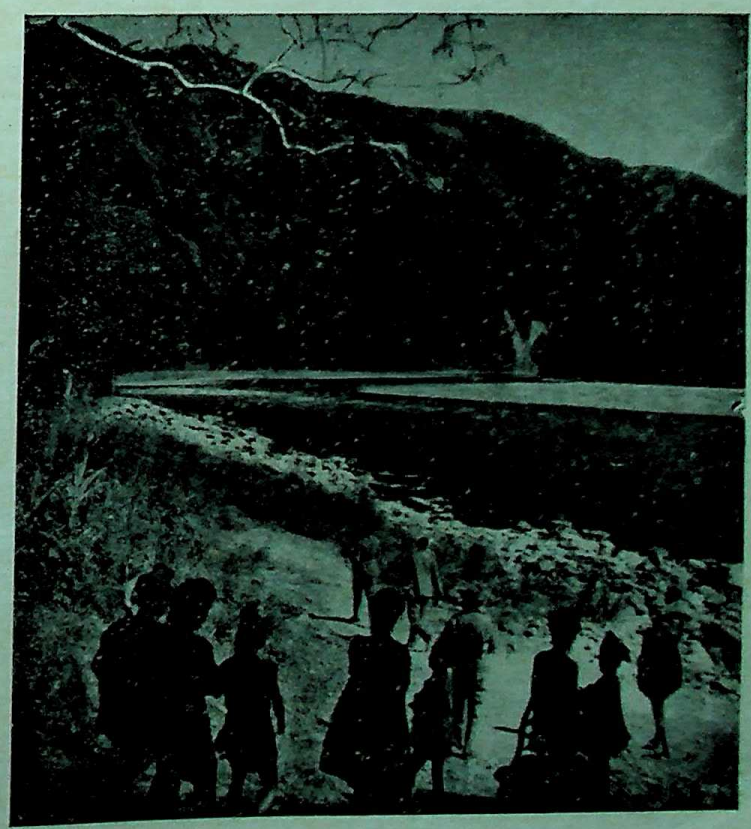
An old church at Dibrugarh disappearing into the Brahmaputra

to bank of the sandy strata, which causes the waters to be surcharged with many suspensions. A snag in the course of the river immediately forms a *chur* which is at times washed away by the next flood, and at times becomes a permanent island covered with grass and reeds. In fact, alluvium and diluvium are carried on in a colossal scale in the Brahmaputra.

The branches of the huge volume of flowing water of the Brahmaputra are large, important, and form a network of channels. The current in the Assam Valley is swift, and there being no high banks, flooding takes place easily.

About 450 miles down the Assam Valley, the

A sharp bend on the river in the Frontier Tract



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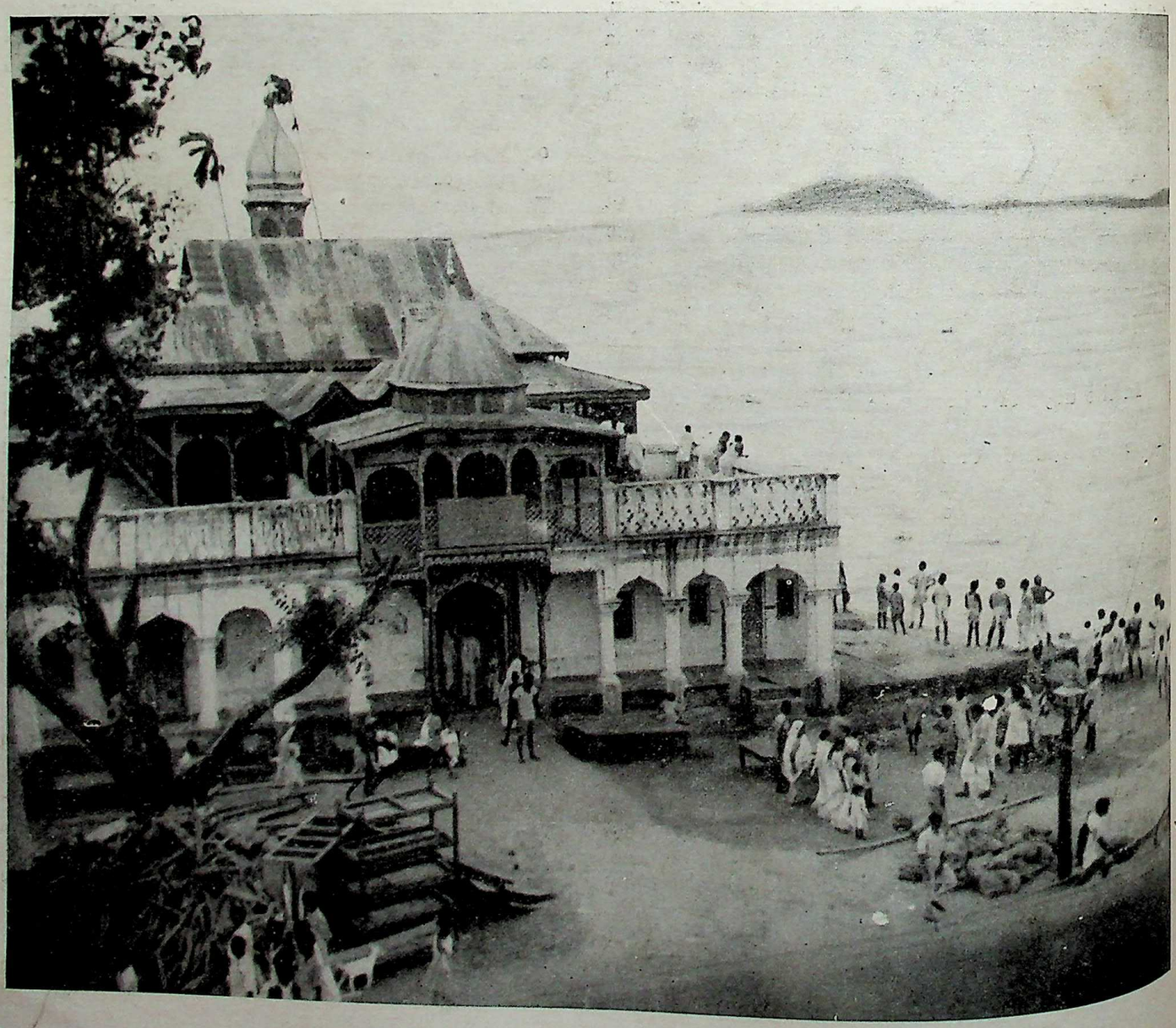
Brahamaputra sweeps to the south around the Garo Hills and enters Rangpur District, from whence it continues for 148 miles through the plains of Bengal up to its confluence with the Ganga at Goalundo in 23°51′N. and 89°45′E. The Brahmaputra's original course was across the Mymensingh District, when it discharged its silt into the Sylhet swamps and received the Surma and flowed directly into the Meghna. This is the course shown in Rennell's Survey of 1785, but at the beginning of the 19th century the river could not hold its own against the Meghna, and being forced to find another outlet for its waters, broke to the west and joined the Ganga at Goalundo. The lower portion of the Brahmaputra is a network of channels overflowing during the monsoon and getting dry in the cold season. The main tributaries of the Brahmaputra after leaving the Assam Valley are the Dharla and the Tista.

The Brahmaputra is important for agricultural and commercial purposes and is only next to the Ganga in importance. It is 1,800 miles in length and drains an area of 361,200 sq. miles. The recent floods in the river caused great havoc. The Flood Control Board, Brahmaputra River Commission, have chalked out a programme up to May 1955 which, if worked out, will stop a similar disaster as happened this year, when the rains break out next year. Topographical surveys are to be undertaken, photographic records maintained, and the supply of mosaics, spot levelling and preparation of maps are under way which might lead to another mighty river project. In the meantime the flood overflow finds its own drainage and the plains of Eastern Bengal are well watered, yielding inexhaustible and abundant crops of rice, jute and mustard. It is only when these crops are destroyed by inundations of the river that tragedies occur, as did this year. An upheaval which was the origin of the Madumpur Jungle near Dacca deflected the Brahmaputra into Sylhet, away from the Ganga; but this was not the last of the river's changes.

The trouble with the Brahmaputra is no doubt

The oldest Jain temple in Assam eaten away by the flood waters



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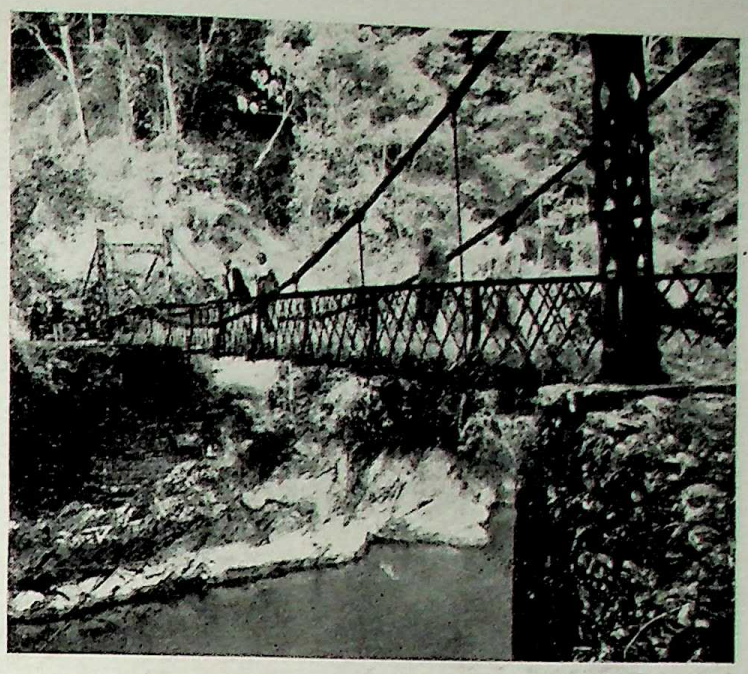
due to the peculiar meandering of the river, especially above Dibrugarh. If these unchecked waters could take one long winding channel, much tragedy could be averted. E. I. Bonnaud writing on "India's Waterway" in the *Journal of the Institution of Surveyors (India)* July 1954, remarks: "Such a channel if carefully chosen, should be capable of being permanently improved by deep dredging and bandalling. It is by beginning above that the best chance of improving the Brahmaputra permanently lies. Unfortunately, bandalling is not permitted above Dibrugarh, nor have we a dredger capable of deep dredging. A Committee of experts, which combined authority with knowledge, appointed by the Government, has stated that important improvements are to be undertaken shortly to relieve Assam's ills arising from floods. These improvements should be extended to her natural waterways, and to the Brahmaputra itself, particularly above Dibrugarh, the seat of Assam's troubles, and extended to Saikhoa Ghat, the terminus of the Dibru-Sadiya Railway. With the development of this branch of the river coupled with improvements to Saikhoa, Dibrugarh would also be relieved of much ghat trouble. The authorities would be well advised to ponder the opinions expressed from time to time in the newspapers."

It is possible to navigate the Brahmaputra up to Dibrugarh for about 800 miles, and smaller craft ply on its waters in the lower reaches. The Assam Valley, however, has little boat traffic. Gauhati is the extreme point reached by boats and Goalpara is the main harbour for trading boats of the larger variety. Most of the traffic is from Bengal and the United Provinces and large and small steamers ply between Dibrugarh and Goalundo. There are many ghats on the way, some being quite important. Most of the traffic is in tea, coal, timber, hides, lac, raw cotton, jute, oilseeds, rice and other grains from East Bengal.

Surveys of the Brahmaputra have been carried on by the Joint River Steamer Companies with their own Pilot Services and the results have been miraculous. In fact, few systems in the world, I believe, can compare with this. One thousand miles of the Ganga and the Brahmaputra with a number of shoals have been marked out by bamboos for navigation by night. Aga Beacons will introduce a modern lighting system on these two rivers, as has already been done on the Padma. I remember a wonderful trip we had on a paddle steamer through the Sundarbans from Calcutta to Goalundo in the days before partition. The search lights played in front picking out the markings and the ship found its way triumphantly through the dangerous waters.

The large expanse of the confluence of the Brahmaputra and the Ganga at Goalundo was indeed a magnificent sight. The Hydrographic Department of the Joint River Steamer Companies have prepared charts of hundreds of miles of



A hanging bridge over the river in Naga hills

waterway and is busy at present collecting valuable hydrological data. The Brahmaputra covers 465 miles of important waterways and 730 miles are occupied by its many tributaries. Navigation might be improved by the Joint River Steamer Companies in the Noa Dihang, Manas, Teesta, Disai and Thanzi in the near future.

Assam is known in Puranic and Tantric literature as Kamarupa and as Pragjyotisha in the Mahabharata, in which epic its extent stretched from the Bay of Bengal to the Karatoya, which was then a river of great sacred importance and united the streams from the Kosi, Tista and Mahananda. Its tutelary deity was a mermaid goddess called Kausika who was worshipped in the Matsya Desh, which corresponded to the tract between the Karatoya and the old bed of the Brahmaputra. The temple of Kamakhya near Gauhati is mentioned in the Kalika Puran and the country extended around this temple for many miles. Kamarupa in the Jogini Tantra included the Brahmaputra valley, Rangpur, Koch, Bihar and even perhaps the Garo Hills.

Bhagadatta was the well-known king of Assam mentioned in the Mahabharata. Arjuna was said to have attacked his kingdom and Bhagadatta with many Kirats and Chins and other warriors of the sea coast was defeated after eight days of fierce warfare. Bhagadatta later assisted Duryodhana against the Pandavas and the Drona Parvan describes his heroic deeds in four sections. He actually rescued Duryodhana from Bhima and was later defeated and slain by Arjuna because Krishna rendered harmless the invisible weapon which he himself had given to Bhagadatta's father, Narak. His line continued for nineteen generations.

The modern Gauhati or Pragjyotishpur was the

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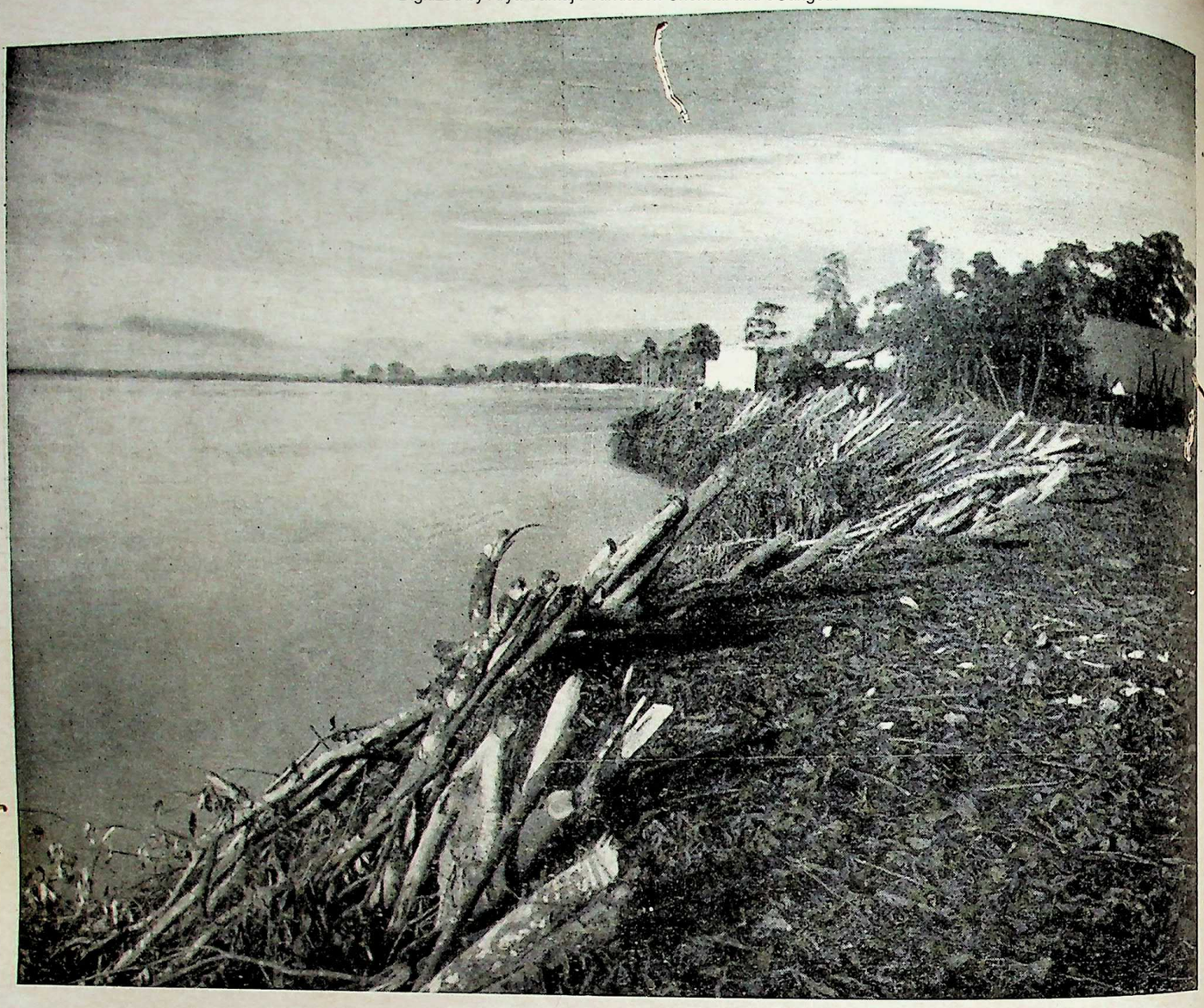

Measures to stop further erosion at Dibrugarh

capital of Narak and his descendants. The name perhaps implies the city of Eastern Astrology for the country is well known for its magic and incantation. In fact, it is believed that it was in Assam that the Tantric form of Hinduism originated. The city held a commanding position on the Brahmaputra and many kings must have made it their capital.

Sri Krishna is a favourite figure in Assam mythology. The Brahmaputra Valley was known to Buddhists of Further India as Weisali. A well-known king Bhismak is mentioned in the Bhagavat who built a fort between the gorges of the Dikrang and Dibong rivers, the ruins of which speak of his ancient capital. The mighty walls of hewn granite stones surrounded by bricks without any cement are a worthy example of the art of ancient architecture. There are also four large tanks in the same locality.

Bhismak's daughter Rukmini was wooed by Krishna against the father's wish, who had settled her marriage with Sisu Pal. Rukmini eloped in Krishna's chariot on the day fixed for her marriage. The crowd of invited guests pursued Krishna but were defeated and Krishna married the beautiful Rukmini at Kundina amid the rejoicings of the people. Assamese songs are replete with allusions to this romantic marriage. The legend is published in Assamese under the title *Rukmini Haran.*

The Brahmaputra has been known through the ages, for in canto IV of the Raghu Vansa, it is said that king Raghu crossed the Lohit (Brahmaputra) and defeated the King of Pragjyotisha, and received a number of elephants as tribute. Many of the hills through which the Brahmaputra winds its way, are sacred. In the district of Kamrup, the Burgohain Parbat in the Chamaria Mauzas is sacred to Siva to whose honour a temple was erected at its feet. Kamrup once formed the whole of Kamrupa and in 1000 B.C. was a powerful kingdom ruled by non-Aryan princes. There is an island in the Brahmaputra called Umananda, in the district of Kamrup, on the northern bank of which is a temple called Aswakranta. It stands on a rocky promontary and is approached by a long flight of stairs. It was here that Krishna halted when he

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carried away Rukmini, and the holes in the rocks are believed to have been made by his horses' hoofs. Another smaller island near the shore is said to have been created by Krishna as a screen to hide Rukmini, while she bathed, from the gaze of the people on the bank.

The mighty river, "Son of Brahma" asserts itself more and more as the years roll by. Today, we read of its destructive powers. Opening the paper yesterday, I read: "The River Brahmaputra is slowly eating up more soil and, about one-furlong-wide land all along the six-mile-long river bank has been eaten up since Prime Minister Nehru's visit to Dibrugarh during the first week of September 1954. The whole area on the river bank has been declared a danger zone and even residents living in houses near about that area are allowed entrance with permits. The military personnel are guarding the danger area. There is no trace of the Dak Bungalow, post office, Circuit Houses, playground, the Church, Deputy Commissioner's residence, Police Superintendent's residence and a large number of other residential houses and offices. The maternity ward presents a desolate appearance."

But rivers are the gifts of God to man to fertilise and nourish this earth, and man will soon find a way to conquer Brahmaputra mighty force and use it for the good of humanity. Even now the Flood Control Board is busy and soon the harnessed waters of this "Son of Brahma", we are sure, will flow bringing joy and not sorrow in its wake. Then, from its source at the base of Kailasa, through its course through the Assam Valley and the plains of Bengal, when it joins the Padma and the combined waters fall into the sea, the Brahmaputra will become a life-giving watercourse and will cease to bring tragedy to the lands through which it flows.

THE PAINTERS AND SCULPTORS OF ORISSA (*Continued from page* 23)

The stone carvers, most of whom live in a narrow *cul-de-sac*, well hidden in a maze of streets behind the Puri bazaar, had long since given up all hope of regular work in stone. They managed to eke out a precarious livelihood by carving temple figures in a soft white material known as soapstone. Some of the work was of a high artistic quality but so delicate that the slightest jolt resulted in serious damage or breakage.

When approached, some of the sculptors were most eager to work in stone once more, but seriously doubted the possibility of finding an outlet for stone sculpture. Once more assistance was given and some good examples were exhibited in the big cities. The response was quite remarkable and today the "Street of the *Pothurias*" resounds with the rythmic sound of hammer and chisel on stone. The *pothurias* are deeply conscious of their ancestry from the builders of the Orissan temples and consequently draw their inspiration from the work of their forefathers in Puri, Bhubaneswar and Konarak. The classic style is retained.

The Government of Orissa has shown considerable interest in these developments and has now established an Arts and Crafts Centre in Puri under the leadership of a trained artist. This Centre serves as a link between the artists and the market and provides guidance to the artists on the work suitable for the modern Indian home. The painters are now also making decorated tea trays, wall plaques, book ends and painted wooden toys. The sculptors are also making carved stone flower bowls, teapot stands, ashtrays, etc. By this means it is hoped that there will be a continuing interest and appreciation of this work, and that the folk art of Orissa will not suffer the sad fate which has befallen so much of the ancient arts of India.

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The Salt Lick colony with part of the wall pushed down by elephants

Megalithic Metropolis

Victor Rosner

TWO hands gripped me about the shoulders. I heard a whisper. "Look to your right". I stopped. I turned right. Three elephants led by a tusker moved out of a *shola*. They were making for another patch of jungle like the one they had just left, about a mile away. I watched, fascinated, at my first elephants in the wild, unfettered, unbroken, as free as air around me.

I raised my binoculars. The elephants were moving over a rocky escarpment. The tusker had stopped. It rubbed itself against a pile of stones, just as a goat would do leaning against a length of wall. It then followed the others into a *shola*.

I looked again. That pile of stones filled the lens. They were dressed, laid one on top of the other forming part of a wall. One corner had tumbled down. I could distinguish parts of a wall on three sides. They were meant to enclose something, flat stones supported on other raised stones, a house of sorts.

It was near sunset when we sighted the elephants. Back we came to camp. Our tents overlooked the Nal Ar Valley, 2,057 ft. about sea level, in the North-East Anaimalai Hills, South India.

We were four scouring the hills for dolmens—tables of stone—one of the many type of stone structures that have come down from a forgotten people who roamed the wilds as far apart as India and Britain. A people seemingly bound to one another by that great family trait—the Megalithic monuments.

It was a rogue elephant that had brought us together in the N.-E. Anaimalai Hills. It was a herd

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of elephants that took us to a city of great stones in these same hills.

We walked into this city of great stones the next morning. I stood on one of the larger cap-stones and counted the stone houses around me. They were 125 in all, within easy reach of one another. The closest was a yard away from its neighbour, separate, self-contained within its own walls.

On the crest of the ridge there were 21 grouped in a large horse-shoe. The rest were scattered on the rocky slopes of the ridge marked 3,000 ft. in the survey map, and known to the nomadic Pulyas as Muchakutta Parai.

Lower down the ridge, on a broad ledge, there were five more groups of dolmens. Three were built parallel to one another, 18 and 19 feet apart. The fourth was at a distance of 55½ feet from No. 3. At right angles to this fourth group was No. 5 with only five feet between them.

We called these the Salt Lick Colony. Elephant, bison, deer and pig took their quota of salt from a pool a stone's throw from here. The ground was a maze of spoors.

I had conducted archaeological expeditions for these very same monuments of the Neolithic Age in the Pulni Hills, a range due north of the Anaimalais, in the Talayar and Tevankarai valleys. The dolmens there were few, scattered over a large area. Here was something grand, a city in great stones laid out in ordered lines, with a variety of types, occupying a whole ridge. It was only later in this same Anaimalai Expedition that I saw similar dolmen cities Mungmalai, Mariur, Valeper Kumbu, Alampatti in the Travancore section of these hills.

In its simplest form a dolmen can be likened to the house of cards we built on the nursery floor. Substitute the cards with large slabs of rock, broad and flat, from four to ten inches thick, standing upright, and the whole covered by a large flat stone and you have a dolmen. It is this large cap-stone that gives it the appearance of a stone table, hence the name. The same principle that holds up your house of cards keeps these colossal slabs of rock standing. Dolmens are generally built on rocky escarpments and the upright stones are not dug in.

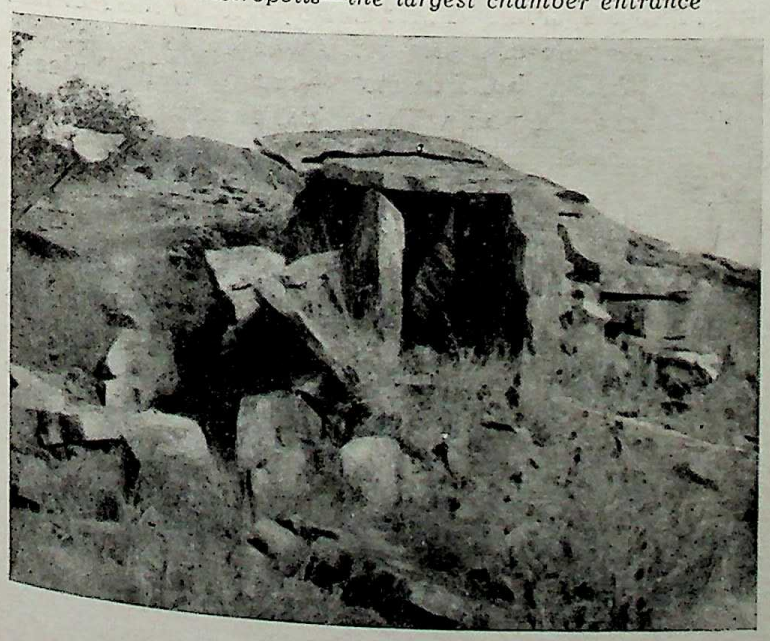
Dolmens are just one type of great stone monuments. The megalithic engineers reached the peak of their profession in the giant Trilithons of Stonehenge on the Wiltshire downs in England.

Dolmens—the actual stone chambers of six uprights and a cap-stone—may take any shape, round, rectangular, square. They may stand alone or be grouped in colonies. The chambers are generally surrounded by a wall. The wall is peculiar to the Dolmens of South India. The walls are generally absent from dolmens in other lands—North Africa, Spain, Portugal, Britanny, England, Eire—where dolmens have been reported.

The Megalithic Metropolis on Muchakutta Parai had dolmens of many types. There were the usual fort like groups—known locally as *Pandian Oods*—the houses of the Pandians—made up of two or more chambers enclosed by a well-built wall, a tall man's height. There were dolmens of just a single chamber, the cap-stones piled high with rubble, and looking like so many half-opened mushrooms. There were cap-stones flush with the ground, their chambers had been completely silted up.

The best of the series was a single chamber 18 ft. long, 5 ft. 4 inches high, and 3 ft. 5 inches broad, with space enough to seat the 24 members of our expedition. The back upright slab measured 5 ft. 10 inches by 6 ft. four inches in height. A single side slab was 10 ft.

Megalithic metropolis—the largest chamber entrance



One of the best dolmens showing the art of wall building

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Double dolmen chambers in the north-east Anaimalai hills

The home of "men of short stature"—the friends of the gods

in length, 5 ft. 4 inches in height, and it was 10 inches thick. The walls that once enclosed this chamber took a rectangular shape measuring 28 ft. along the longer sides, and 13 ft. 4 inches along the shorter. To put up such a construction was indeed a Herculean task, one that baffles our ideas of engineering accustomed as we are to cranes, bulldozers, scoops and pulleys that do the lifting and moving for us.

Local legends spoke of a race of dwarfs who once inhabited these stone houses. These men were the friends of the gods who helped them to move such large and heavy stones, a task impossible for "men of short stature". As time went on these dwarfs took to eating one another. The gods in anger hurled fire and brimstone on their erstwhile friends. All that now remains of these "men of short stature" are their houses of stone. Well did the Pulyas bring in the gods as an explanation. They had no other way out.

Were these dolmens before us a Metropolis for the living or were they just stone vaults in a city of the dead? If this ridge was a Necropolis, the various types of chambers can reasonably be accounted for on the assumption that the dolmen builders must have drawn a distinction between a king and commoner even after death.

In the Pulni Hills the same type of dolmen, built above ground level, is found side by side with the buried dolmen, known to archaeologists as the "cist" with or without a "port-hole" in one of the upright stones. Stone circles are to be seen in the same vicinity of these two types of dolmens. These stone circles usually indicate places of internment, generally in large urns. This overlapping of megalithic monuments with a definite and elaborate method of internment--the burial urn—may place the unburied dolmen as just one stage in the cult of the dead. The various types of stone vaults may show a gradual evolution beginning with the unburied dolmen which archaeologists assign to the pre-cremation period of the Neolithic age, down to the burial of an uncremated corpse in a five feet deep urn of baked clay.

At the northern end of the Megalithic Metropolis, four furlongs away from the large chamber, there stood a stone 5 ft. 1 inch at its highest point, 3 ft. at its lowest. The stone looked like a bison head with its horns missing. It measured 8 ft. across the forehead, the highest point and tapered down to a foot at the lowest portion. Looking from the rear the stone showed a gradual slope with somewhat of a hollow in the centre. To the four of us who examined it from all possible angles it looked like an altar of sacrifice. Situated as it was, in the heart of this stone city, made the assumption more probable.

If legend tells us that the men of the Megaliths were men of short stature, men friendly with the gods, but men who through their own folly forfeited that friendship, we know in our heart of hearts they were men like ourselves. Their work points to the fact that they were men of fixed habits. Men who hunted and yet had time to build in stone—crude dwelling places, spirit-houses, if you will, or just memorials of their departed chiefs and clansmen.

From the island of Ceylon, across Adam's Bridge, through the ranges of the Western Ghats, linking up with the Indus civilisation, spanning the countries of the Middle East, hugging the sunny shores of the Mediterranean, passing through the Iberian Peninsula, penetrating into Britanny, then across the channel to Britain and Eire, the great stones run like a chain, linking the nations in man's belief in "the here-after", carrying the message of hope beyond the grave.

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Inter-University Youth Festival

Kala Thairani

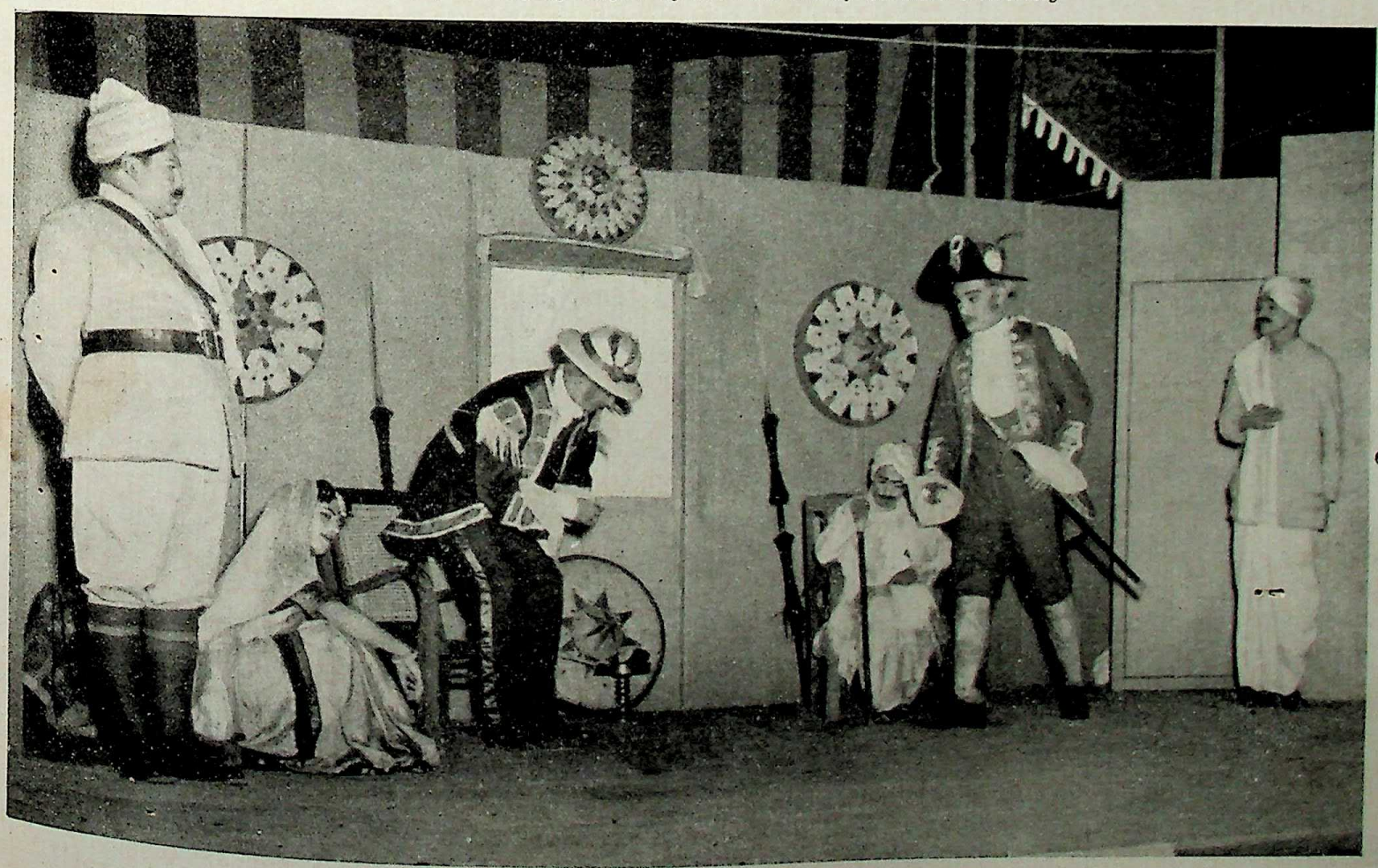
IT was a unique event. For the first time in the educational history of India, young university students from all over the country had gathered together at a festival of song, dance and drama. For the first time they got a chance to acquaint themselves with students from so many other universities, students with different backgrounds and different standards of life, speaking different languages, and yet all belonging to the same brotherhood of the student world.

In twos, threes and fours they went around and filled the air with their light gay laughter. For seven days they lived in tents, not minding the discomforts of field life, conscious only of the spirit of comradeship around them and the new friendships they were developing every day.

The Talkatora Gardens in New Delhi, where the festival was organised, became a tent-studded town, made colourful by the flags and insignias of 26 of India's 51 universities, humming with brisk activity from early morning till late in the night.

This Inter-University Festival lasted seven days, opening on November 1, 1954, in a splendour of bright gay colours. About 700 students, both boys and girls, were guests of the Union Ministry of Education which organised the function. Though Inter-University debates and sports are a common enough feature in our country, this occasion was indeed the first of its kind which brought together students from all universities to participate in a programme of cultural and co-operative activity. Student delegates from univer-

A scene from a play staged by the students of Gauhati University



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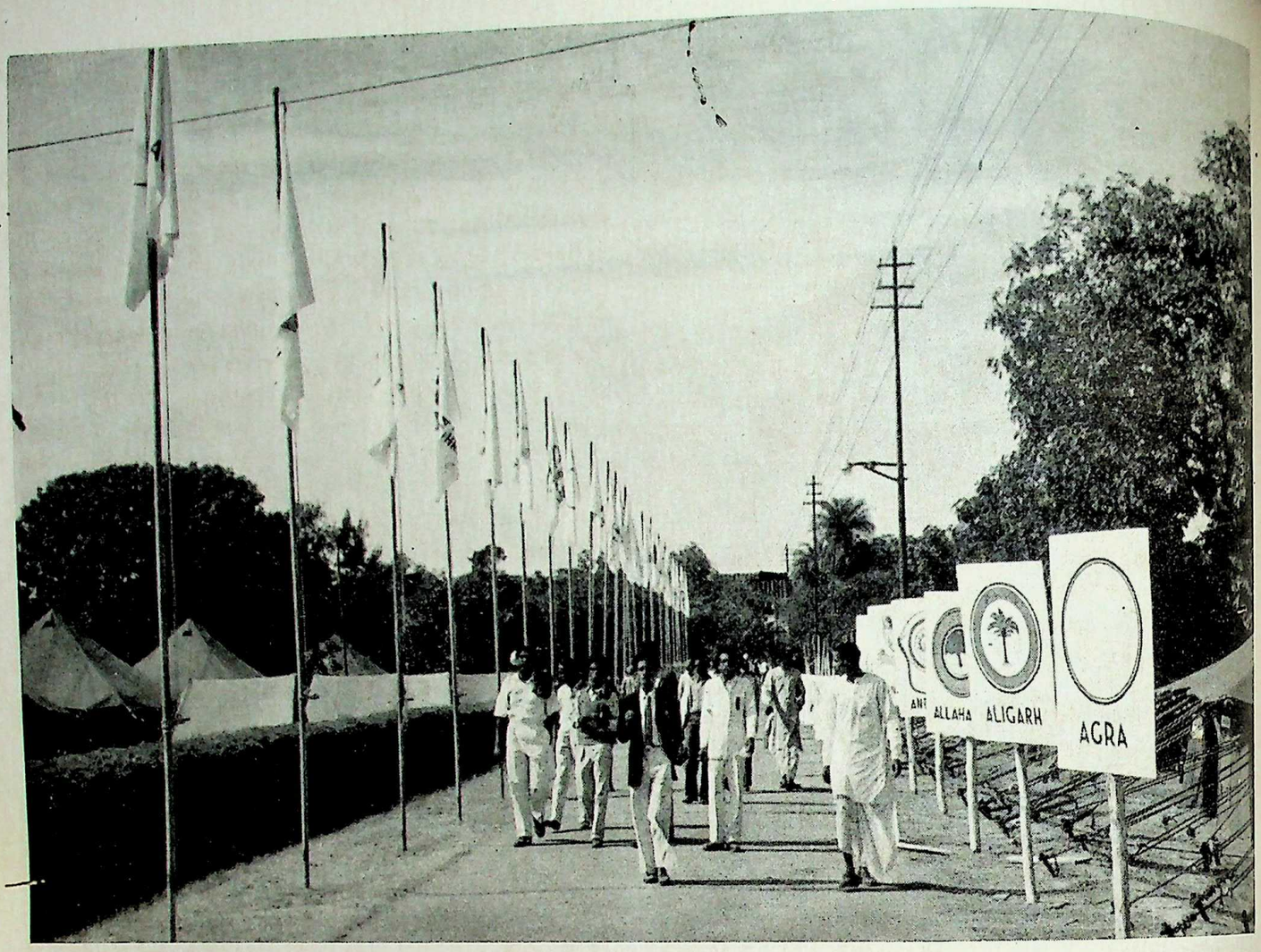

Flags of various participating universities

sities, took part in competitions for awards in arts and crafts, one-act plays, classical and folk dance, vocal and instrumental music. It was a veritable assembly of talent.

Dance and drama in India are inseparable. The Hindi words *nata* and *nati* signifying actor and actress, also designate dancer and danseuse. The Indian classical dance makes use of dramatic elements to depict a mood or a sentiment. It is because of this intimate link between the two items and also because of their universal appeal that an attempt has been made in this article to treat them at some length.

The Indian classical dance is a blend of all elements that catch and delight the eye—spectacle, movement, music. A dancer's quaint costume, grace of movement, rhythm and the play of soft alluring lights on the stage —all these create and lend an air of mystery and romance to the art.

There are four main styles in the Indian classical dance, namely, kathak, bharat natya, kathakali and manipuri. Both boys and girls at the festival joined in the exposition of these styles. Some of them performed with the innate ease and grace of well-trained dancers.

Kathak dance is the stylised classical dance of Northern India. Originally a temple art, Kathak was gradually transformed into a court dance under the impact of Muslim, particularly Mughal, influence. Passing through further cultural vicissitudes, it has now assumed a form and meaning that confine it mainly to the communication of sentiment to the audience. Subtle facial expressions and a complex footwork are a part of the dance. For example, let us say, a man dies. A Kathak dancer here would express the significance of death through the dance.

The Bharat Natya style is from Southern India and the dance is composed of several parts in particular sequence. Here the emphasis is on gestures and the movement of the hands and feet is quicker, more rapid than in Kathak. The poses are like the lyrical lines of Indian sculpture. Vivacious eye movements

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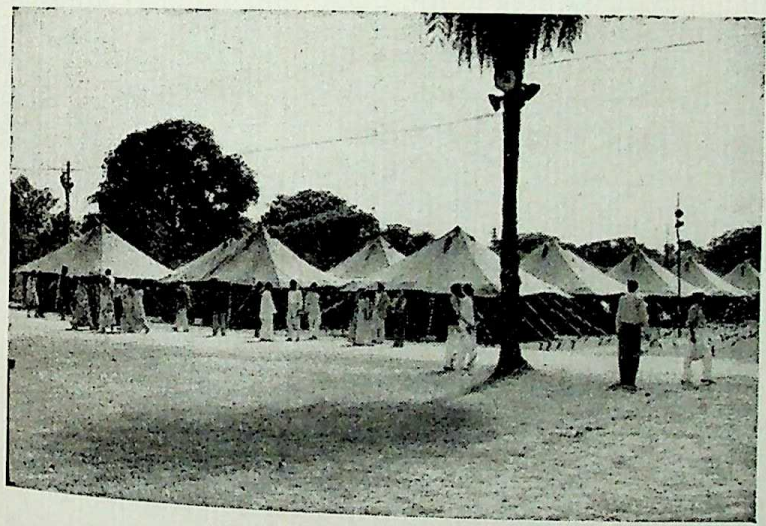
and graceful sliding neck movements, with hands and feet moving to the rhythm of the beat, are essential features of the dance.

Kathakali is the traditional dance of the extreme South India, mostly prevalent in Kerala and the Malabar Coast. The dancer's main medium of expression here is through the gestures and movements of the body.

Manipuri dance is of two types: *lasya* or the feminine that embodies delicacy and grace, and *tandava* or the masculine which manifests force and virility. The accompanying music is composed to bring out the contrast between the two types.

The Indian drama dates back to the earliest times. Today every region in India has a distinct drama of its own. This regional diversity has given Indian drama a variety.

This variety was ably displayed at the festival. More than 20 one-act plays, in nine different languages, classical or modern, original or translated, provided a



Students' camp at Talkotra gardens

comprehensive picture of the theatre in the Indian student world. Plays were taken from classics or history, from authors writing on socio-economic problems of the day, few (indeed only two) were original, written by the students and the staff purely for the occasion. In this display of talent an observer could not fail to see the keen enthusiasm of the young actors and their urge for self-expression through the medium of the stage.

The students from South Indian universities drew their plays from the ancient classics or history. These plays tended somewhat to be static and archaic. For the players acting as ancient kings, priests, court-dancers, monks or attendants striking theatrical gestures and attitudes failed to carry effect.

Other universities such as those from the East or North, chose comedies or satires. Comedy and fun are more in keeping with the zest of youth. Here the students acted with greater ease and self-confidence. Their clothes, manners and gestures were natural, their dialogues more lively. Some outstanding characterisations gave a promising assurance of the potentialities of young talent that needs every encouragement.

Where students wrote or co-operated among themselves to produce the play, the result was most satisfactory. Two examples of this were the first and second prize-winning plays. Both were full of life and zest. Both were written and produced for this particular occasion, the festival. Both were characterised by originality, a sense of humour and promising talent. The ease, flow and variation in tone and movement delighted the audience.

Kumari Sheela Mukherji of Bihar University in a dance pose

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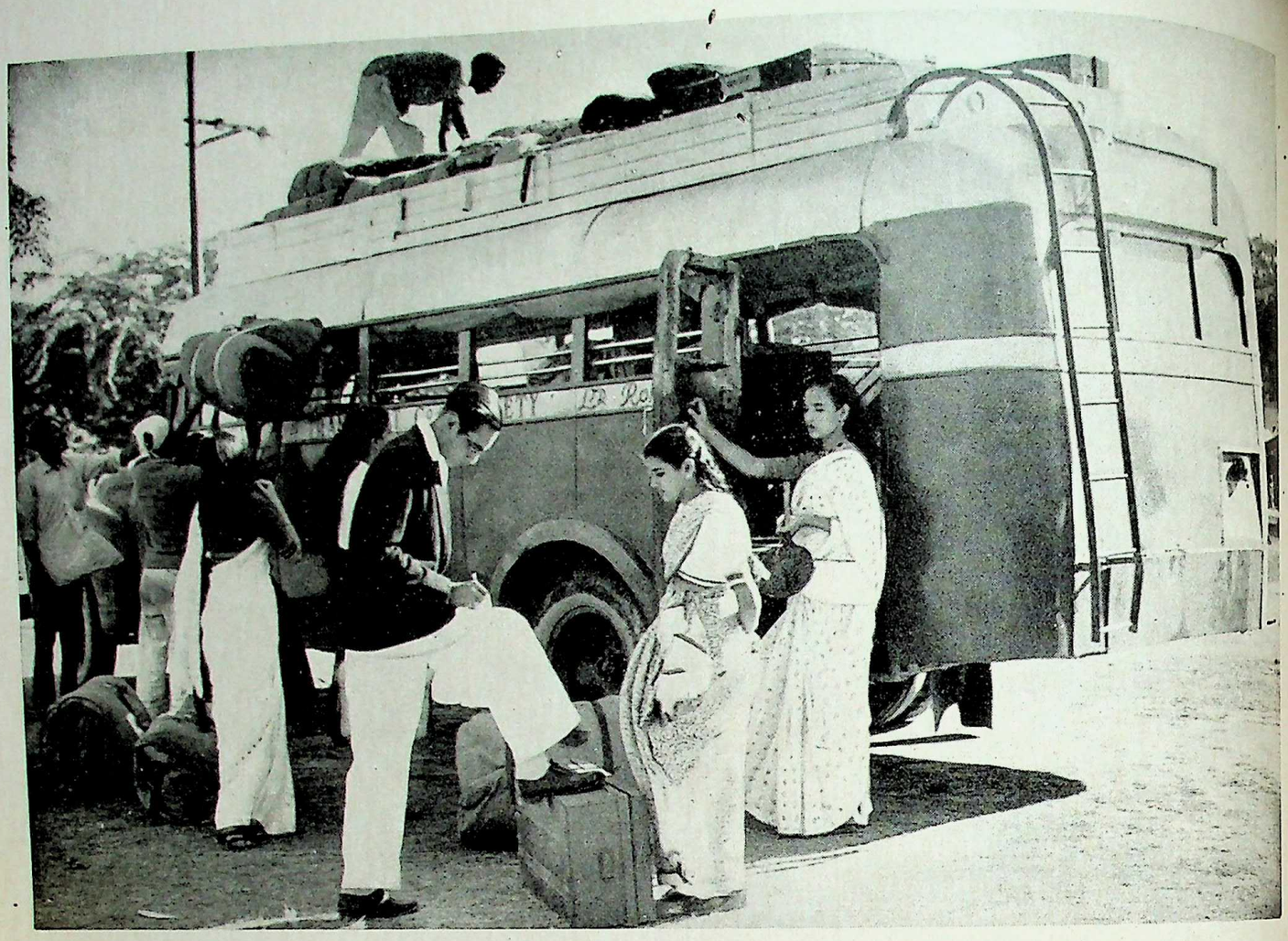

Autographs were signed and souvenirs exchanged at the close of the session

Needless to say that the festival was a great success. Every objective that the organisers had in mind was realised, every expectation justified. Living in an atmosphere of complete freedom, away from the cramping hands of a bookish world, with every opportunity for individual initiative, the students lived an experience such as they had never had before.

All through the night on the eve of their departure, the Talkatora Gardens blazed out in huge bonfires around which girls and boys danced with gay abandon. Hundreds of autographs were signed and souvenirs exchanged.

To the 750 odd students assembled at the festival, the Talkatora Gardens Camp was not merely a camp or a place where they had met for fun; it was a place where new friendships had been made and differences forgotten. It was a symbol of new India emerging, an India where the young go forward in fellowship and goodwill.

This spirit was well expressed in the inscription at the base of the pedestal on which stood the two symbolic figures of a young man and a young woman jointly holding a torch, at the entrance to the Camp—"Lead on, Youth."

☆

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BOOK REVIEWS

AT THE FEET OF BAPU by Brijkrishna Chandiwala; with a Foreword by President Dr Rajendra Prasad; Published by Navajivan Publishing House, Ahmedabad; Pp. 345, Price Rs. 4|-.

In the plethora of books on Gandhiji, both by Indian or foreign writers, this volume is a welcome and happy departure. Its author, Sri Brijkrishna Chandiwala, a prominent worker and Rais of Delhi city, is a known figure in the Congress and circles doing constructive work in Delhi. Beginning as Gandhiji's *Gwala* (milkman) in the early twenties, he won a place in his heart by his sincerity and selflessness. He frequently accompanied Bapu on his tours and ultimately became his Delhi time-keeper.

The work under review is an English version of the author's Hindi book, *Bapu ke Charanon Men*, which appeared in August 1948. It is almost a "day to day record" kept by the author since 1929. It gives an authenticated and intimate description of Gandhiji's life at the Sabarmati and Sevagram Ashrams, at the Delhi Harijan Nivas or Bhangi Bastee, at the Lucknow Congress (1936) and the Delang session of the Gandhi Seva Sangh, and of his fasts. Its precious feature is the detailed account of Gandhiji's last stay in the capital, from September 9, 1947, to the fateful day on January 30, 1948, the author being also among those who followed the Father of the Nation while the latter hurried to his last prayer meeting.

The author reproduces profusely from the inimitable diary of the late Sri Mahadev Desai and from the *Harijan*, giving Gandhiji's views on machine, art and truth, on 'Gandhism', on independence, on Constructive programme, and on God. It incorporates some of Gandhiji's invaluable speeches and writings, e.g., his historic addresses (both in Hindi and English) at the momentous, "Quit India" A.I.C.C. meeting of Bombay (1942), some post-prayer speeches, and his last Will and Testament to the nation (written on January 29, 1948). Besides, it gives interesting account of Gandhiji's various activities and daily routine as also some telling anecdotes giving a glimpse of his matchless character. The author has also tried to portray how Gandhiji identified himself with the sins of omission of the Indian humanity and suffered for the same. Be it Dr Rajendra Prasad's (then India's Food Minister) distribution of sweets to Harijan children or the Hindu-Muslim riots of Calcutta, Patna or Delhi, Gandhiji devoured all that fire and tried single-handed to direct the nation's resources for transforming the new-won Swaraj to Ramraj. The author piognantly shows how the old leaders, now in power, failed to follow their Master who had to say in the words of Bhagwan Vyas: "Nobody pays attention to it. What can I do?" Sri Chandiwala gives vent to his own heart in the following words:

> "Today we are called independent, but if we really love our independence and want to retain it, we shall have to ponder with all seriousness whither we are heading. We shall have to pull ourselves up sharply, and save ourselves from moral degradation."

This book can safely be recommended as a valuable companion to those interested in modern Indian history and in Sarvodaya studies, and to all English-knowing constructive or public workers.

Suresh Ramabhai

☆

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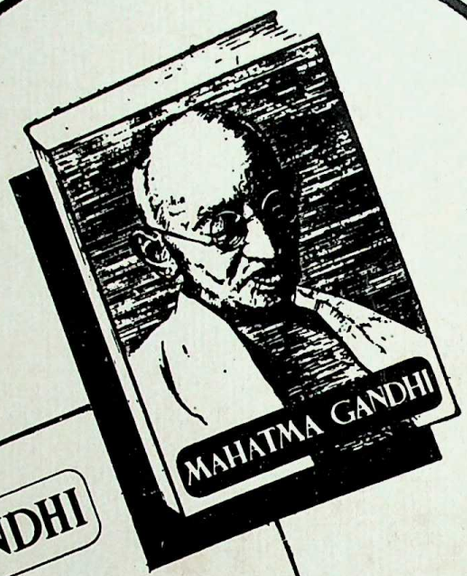

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The MARCH OF INDIA

Vol. VII March 1955 No. 5

In this issue - - -

R. Streenivasan	Republic Day Celebrations	5
K. Rangachari	Indian Economy in 1954	9
Sadath Ali Khan	India and the United Nations	12
V. R. Khedker	India's Mineral Resources	17
Shiva Murti Tewari	The Philosophy of Radhakrishnan ..	23
Gauri Sankar Bhattacharyya	Bhubaneswar—The Temple City of Orissa ..	27
Leela Dayal	Life in Sikkim	31
Padmini Sen Gupta	The Indus	35
D. N. Majumdar	The Chero Tribe of Bihar	39
	Book Reviews	43
	Our Contributors	43

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R. N. TREHAN

The painting on the cover, by our staff artist B. N. Jijja, depicts scenes of rejoicing in the Capital on Republic Day. Delhi is at its gayest on this occasion, and celebrations, extending over a week, include the illumination of public buildings, folk dances by troupes from the States, a cultural pageant and sports.

Illustrated articles, short stories, and features of topical interest or cultural value are invited. All editorial correspondence should be addressed to the Editor, *The March of India*, Publications Division, Old Secretariat, Delhi. Contributions are paid for at our usual rates. The Editor does not hold himself responsible for the views expressed by the contributors.

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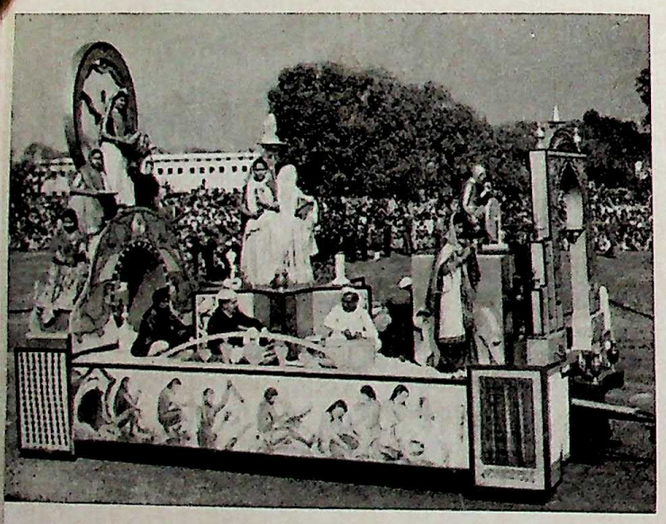
The President taking the salute at the march past

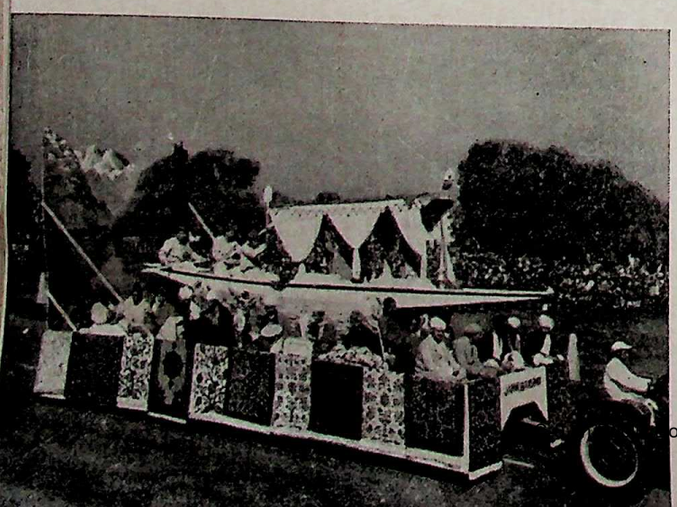


1

Colourful Pageantry

Tableaux portraying contemporary India:

1. *Cottage Industries of Madhya Bharat*
2. *Handicrafts and scenic beauty of Kashmir*
3. *Bhakra-Nangal Project of the Punjab*
4. *Agriculture in Madhya Pradesh*
5. *Industrial Progress of Bombay State*



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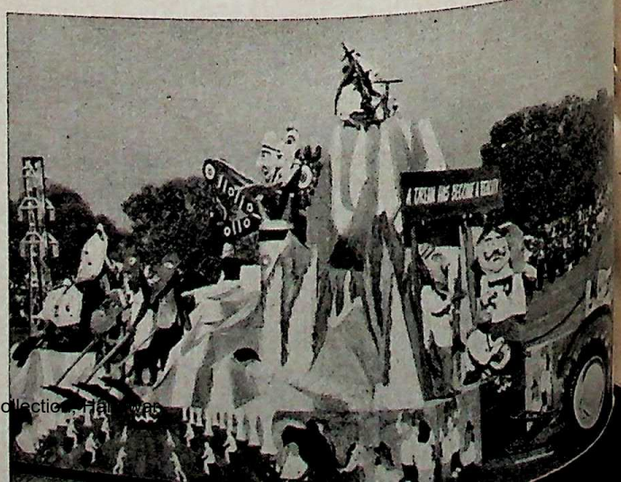

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Republic Day Celebrations

R. Streenivasan

The President, H. E. Mr. Ghulam Mohammad, Governor-General of Pakistan and the Prime Minister at the Republic Day reception

THE Republic Day is becoming India's foremost national festival, which is as it should be. The Republic Day is much more than a mere occasion for festivity and merry-making. It serves to underline the deep sense of unity that is immanent in our national life, the sense of purpose and dedication to the Republican ideal and that of building up this country anew—that intimately holds together the variety of customs and beliefs that go to make this large country.

Watching smartly turned out contingents of India's armed forces march past, followed by tableaux from the various States was an ennobling experience that heightened the sense of belonging. After the parade and pageant, one feels like saying, "It feels good to be alive, be an Indian, and above all, to belong."

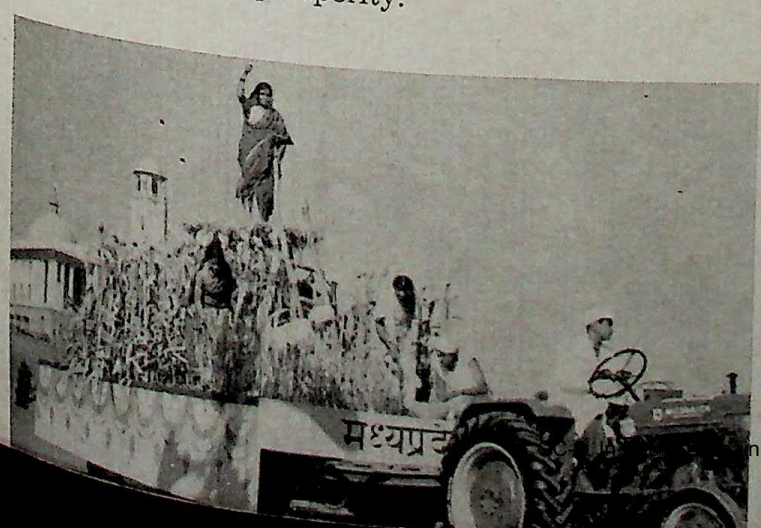
This year's Republic Day festival, the fifth in the series, was unique in more than one sense. For one thing, it was the biggest and the best. And also for the first time, the tableaux from each State effectively dovetailed the typical and most outstanding cultural and economic features of the participating States.

In the pageantry procession that followed the Armed Forces parade, 19 States vividly portrayed "contemporary India". Better known themes than remote and historical subjects merely of cultural value were represented in the tableaux which sought to portray something of our past, the present and the projects we have in view for prosperity.

For the first time, a tableau from Pondicherry and other former French settlements, which have now been merged in India, figured prominently in the pageantry procession. A boat and a lighthouse in the tableau symbolised fishing, an important occupation of the people of Pondicherry. Girls dressed variously in Indian and European clothes and singing French songs in chorus gave an idea of the happy synthesis of French and Indian cultures.

The flag of Sikkim with its "Khorlo" (wheel), one of the Eight Fortunate Symbols, fluttered in the breeze amidst the five-coloured prayer flags in the tableau. Dominating the scene and providing the central motif of the tableau was the third largest peak in the world "Khangchen-Dzed-Nga", (Kanchanjunga) which means "the Great Snowy Mountain of the Five Store houses". The typical Sikkimese background conveyed the picturesque landscape of the State, its people and their culture.

The Madras tableau represented India's creed for peaceful co-existence. The historical scene of Avvai's peace mission, the celebrated Tamil poetess, who visited the Courts of Chera, Chola and Pandya Kings of ancient Tamil Nad and exhorted them to stand united and to bend their energies for the restoration and promotion of peace, symbolised India's cherished objective. The folk dances from Tamil Nad which formed part of this colourful tableau reflected the inner-most spirit of the people of South India. Different cultural



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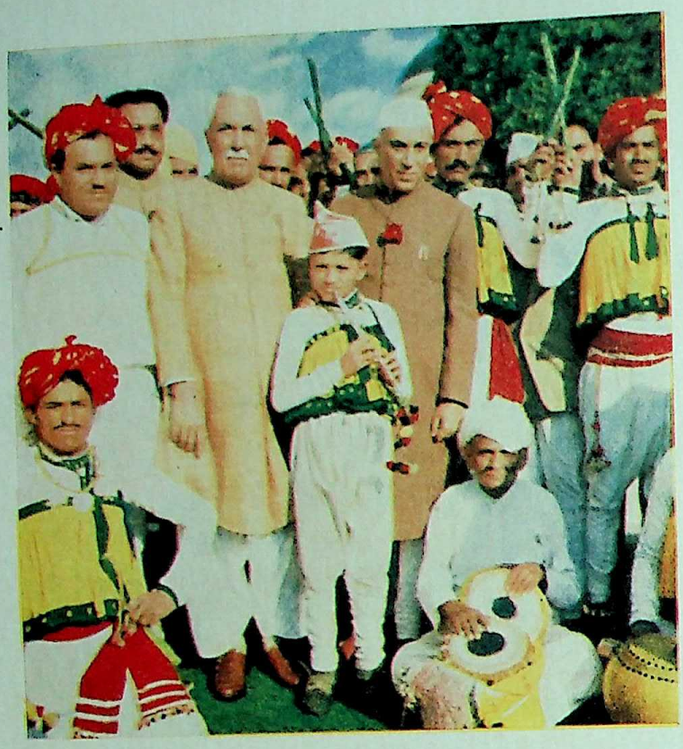


Dr. Khan Sahib and Jawaharlal Nehru with a group of folk dancers

groups of the Tamil country seated along the coastline of a relief map of South India portrayed the harmonious existence of the various communities and the synthesis of different cultures.

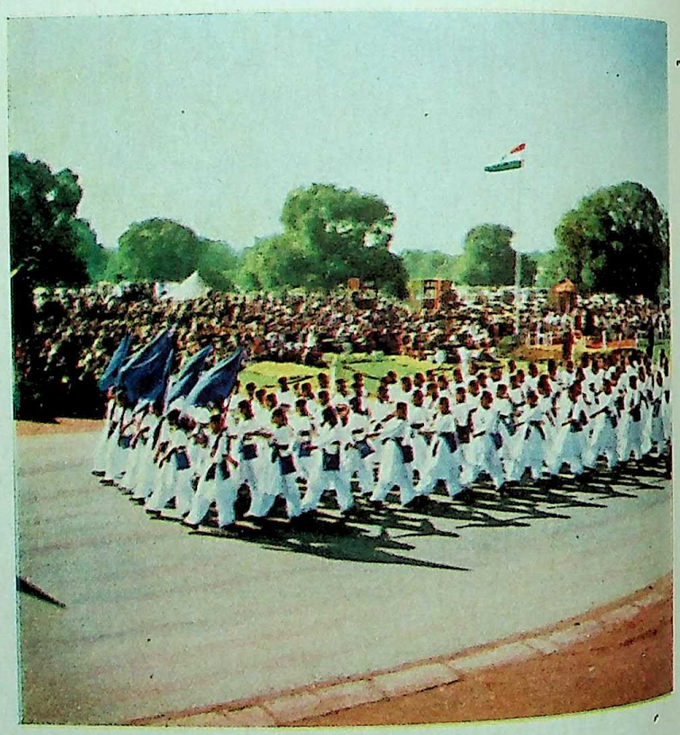
Kashmir represented the handicrafts for which the State is famed all the world over and its scenic beauty. Shikara, a symbol of Kashmir, and Kashmiris, Dogras and Ladakhis dressed in their respective traditional attire and singing to the accompaniment of folk instruments, drew forth spontaneous ovation from the spectators.

Travancore-Cochin presented a familiar utsavam (festival) celebrated in the State, giving us a glimpse of Vaishnavite culture of the State.

Madhya Pradesh showed the three principal crops it produces—rice, wheat and *jowar*. The base of the structure configurated like the map of Madhya Pradesh and divided into three regions, showed one of the crops grown predominantly in the region. A rustic woman of Madhya Pradesh standing on a platform, a sling in hand, scared away crows that prey upon the crops.

Dhumkuria, which literally means the "house of light", is one of Chota Nagpur's ancient Adivasi Institutions. Bihar represented this in the tableau which acted as a window to the outside world on the peculiar customs of one of Chota Nagpur's ancient Adivasi Institutions.

A tableau from Pondicherry showing a boat and a lighthouse



An impressive march past by Delhi schoolchildren

To the people who have not seen Himachal Pradesh, the tableau gave them an idea as to the life and culture and the scenic beauty of the State in winter.

The tea gardens of Assam, which are the principal source of livelihood to the people of the State, reminded us of one of our principal industries. Assamese girls plucking leaves of tea and dancing to the strains of *Jhumur* music gave a vivid description of this growing industry, from a factory where it is processed to the stage when it is carried for marketing.

West Bengal recreated a famous historical scene. Bengal famed for its maritime traditions presented Chandsaudagar, the great merchant-prince of Champaknagar in Bengal of the seventh century A.D.; his ship, Madhukara with its fleet of smaller boats, used

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to carry valuable and attractive products of Bengal to the coastal cities of India and Ceylon. His gaily decorated vessels were a constant source of attraction and wonder to the people who flocked to the port to catch a glimpse of them.

Madhya Bharat, Rajasthan, Orissa, Manipur, Uttar Pradesh and Bombay vivified effectively the cottage industries of their respective States. Madhya Bharat linked up Ahilya Bai, whose name has become a by-word in the State for efficiency and just administration, and emphasised the fact that cottage industries received particular encouragement. Indigenous woollen industry of Rajasthan and the craftsmen of Orissa received special attention. Basket-making, horn-work, bellmetal work, filigree-making and stone-carving were on view. The complementary character

A tableau from Madras

A group of Maria dancers of Bastar, Madhya Pradesh

of mechanised and cottage industries was emphasised by Bombay. While, fittingly enough, the textile mill industry occupied pride of place, a greater portion of the tableau was devoted to small-scale and cottage industries. Thus workers engaged in making *jari* and *paithani* (both typical products of Bombay's cottage industries) were shown working in vicinity to the mill, thus emphasising the mutually non-competitive nature of their functions. In another corner, a man plied a *charkha* in front of a cottage. The prominent feature of the tableau, a dharam chakra, invested the whole scene with a unifying faith.

The two Ministries of the Central Government—Ministry of Irrigation and Power and the Ministry of Production—in their tableaux symbolised the projects with which they are concerned. The variety of benefits that accrue to the society from a representative river valley project was described effectively. A young lady of peasant stock, carrying sheaves of ripe, full-grown corn, and a young man in her company, holding aloft a flashing lamp, respectively signified irrigation and hydro-electric power which are amongst the principal benefits of integrated river culture. A boat, loaded with corn, coal and earthenware and placed in front of a model of a dam, typified the amenities that inland navigation—another advantageous result that would flow from the integrated treatment of a river valley—

Harvest dance by Goans from Bombay

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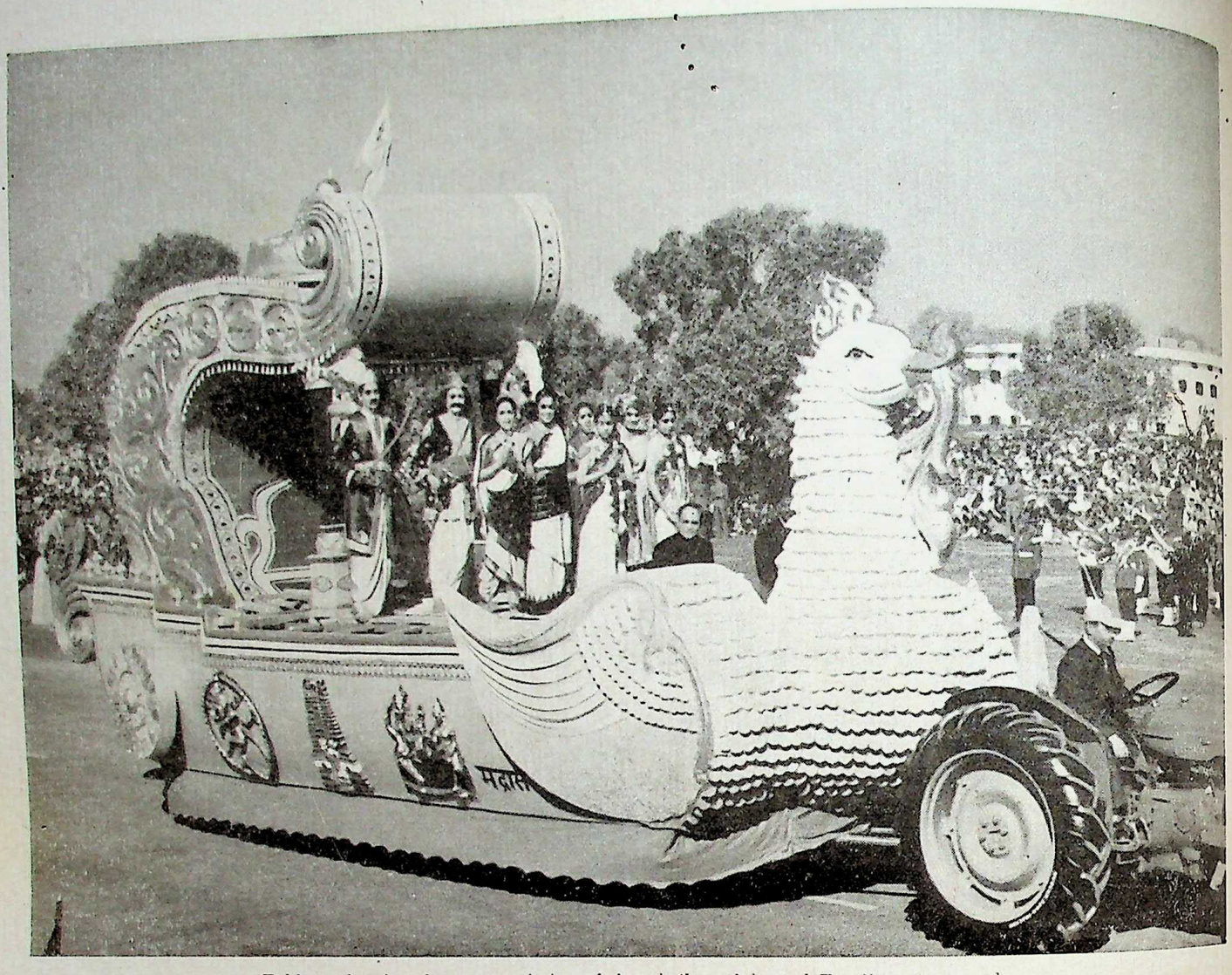

Tableau showing the peace mission of Avvai, the celebrated Tamil poetess, and folk dancers from Tamil Nad

would provide for village economy. A man impersonating Bhagirath, a figure from Indian mythology, who helped bring Ganga to the earth, was seen standing at the foot of a waterfall.

Punjab also went in for the same theme and chose the Bhakra-Nangal Project. Women were seen drinking water avidly from the new canal built in the dry areas. New factories that would be springing up in and around the project site were also depicted in the tableau. The tableau from Hyderabad blended its art and culture to show effectively how artists could play an important role in India's building projects.

The intensification of our ship-building industry was a subject of the tableau produced by the Ministry of Production. Hindustan Shipyard in Vishakapatnam is now throbbing with new activity after Independence and plans at the moment are being implemented to build ships.

Crowning all these, a fitting finale to the pageant procession, was the tableau from Delhi portraying the ascent of Everest which symbolised achievement. It presented the view of a base camp where scientific research was being carried out on the conditions of life that obtained at higher altitudes and a number of model camps situated at varying heights. Colourfully dressed men and women were depicted as marching vigorously towards the goal of a New India.

Colour transparancies by our Staff Photographer, Moti Ram Jain

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Indian Economy in 1954

K. Rangachari

THE outstanding feature of the Indian economy during 1954 was the extreme buoyancy which had characterised almost every sector of business activity. The year 1952 was the turning point, which saw a break in the long post-war spell of inflation and food shortage. In the following year, the main elements of stability in the economy were strengthened. It was only in 1954 that assurance came forth that the economy was decisively moving towards an expansionist phase, without being troubled by the possibilities of repetition of scarcity or of inflation on the scale experienced before.

This relative prosperity was essentially an outcome of the two sucessive good seasons which caused a spurt in agricultural production. Some uncertainty is always involved in calculations which assume that the seasons would continue to remain favourable. Only last year did the feeling grow that the drought cycle which ended in 1952 would not recur too frequently in future to upset the stability so far attained.

In this sense, much of the gain secured through better seasons may now be regarded as permanent. In the future, the development plans now being carried out may be expected to mitigate the effects of bad seasons and improved methods of cultivation now being spread would offset the deficiencies in agricultural production.

Agricultural Production

This growth of confidence is an important element in India's economic picture. During the pessimistic phase, there was a tendency to underestimate levels of economic activity. The benefits of development schemes were underrated. The volume of investment that had taken place was also underestimated both in agriculture and in industry. The correctives have now come into operation.

Agricultural production was estimated to have increased by nearly 11 per cent in 1954 over the previous year, the increase in foodgrains alone being about 15 per cent. In terms of physical quantities, the total increase of about 11 million tons, over the production level three years earlier, was slightly more than double the maximum level of food imports of five million tons reached in 1951.

The effects of these larger harvests have been seen in the easier supplies in grainshops and in lower prices of foodgrains in spite of the abolition of controls. The major increases in production occurred in rice in which the shortage had been the most acute all along and in the other cereals which, when cheap, generally reduced the pressure on rice and wheat. This easy position enabled the Government of India to announce in the first week of July the complete decontrol of rice throughout the country, as the culmination of the process of relaxation of controls which had started in 1952.

Imports of foodgrains in 1954 were only one-seventh (0.7 million tons) of their volume in 1951, and even this import was needed primarily for building up reserve stocks. The sharp fall in foodgrain prices in the middle of the year, gave convincing proof of the adequacy of food supplies. At the same time, the decline even caused some apprehension, lest it might become too steep. The daily per capita availability of foodgrains in the country in 1954 increased by about four ounces (to 17.65 ounces) which was a substantial increase, of about 30 per cent, within three years.

After food, the common man's primary concern is in cloth, the supply of which depends largely on local supplies of cotton. The cotton crop last year was 25 per cent more than in the previous year and provided almost all but an essential proportion of special types of foreign cotton needed by the Indian textile mills industry.

The production of oilseeds, important both for export and for the supply of edible vegetable oils, also showed a net increase of about ten per cent, mainly due to larger groundnut and sesamum crops. All these significant advances in agriculture have more than offset the decline in the jute crop due to its current international position and the insufficiency of the sugarcane crop for the sugar industry.

Industrial Output

The prosperity of the agriculturist has always been an essential condition of the progress of Indian industry, which has to seek its raw materials and markets for its manufactures in the rural sector. The declining cost of living due to the food position has also been a further favourable factor during the year to stimulate larger production.

Much of the unutilised capacity in Indian industry had been reduced even by the end of 1953, by the average rate of increase of ten per cent a year in industrial production in 1951 and 1952 and of another five per cent in 1953. Still, in 1954, a further advance of about seven per cent was made possible, this increase being spread over the entire field of manufacturing, excepting sugar, matches and a few other industries.

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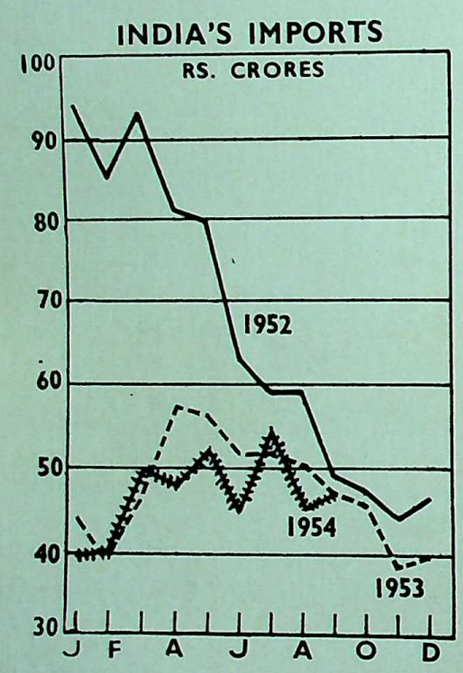
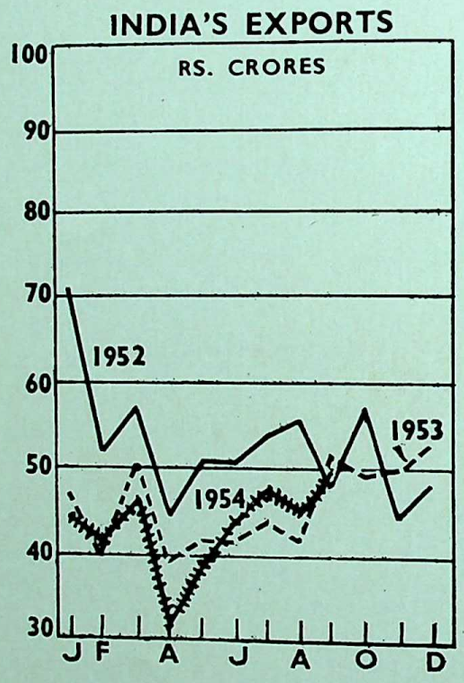
The volume of cloth production in the last two years has been maintained at over 6,000 million yards a year (including handloom cloth) which provided an adequate supply even after a substantial and increasing volume of cloth exports. The per capita cloth availability has at last been restored to the pre-war level of 16 yards.

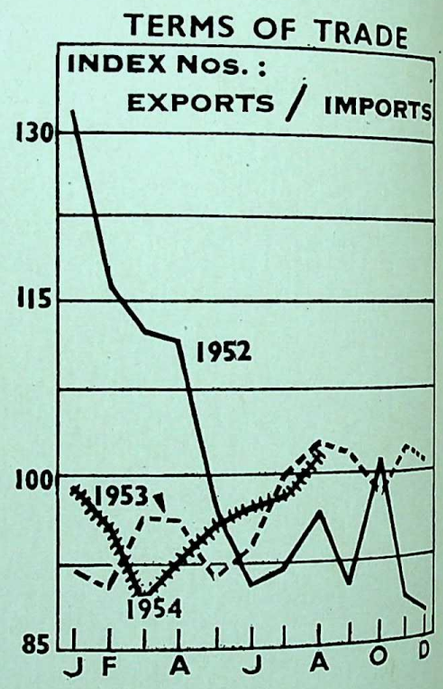
The improved foreign demand for India's jute manufactures during the year caused the industry to regard the outlook as hopeful and restore 48 hours working after a long period of 42½ hours per week. Steel production, which had been affected in 1953 by labour troubles, attained a post-war peak of 1.225 million tons. There have been steady additions of new capacity in cement and paper with proportionate increases in output.

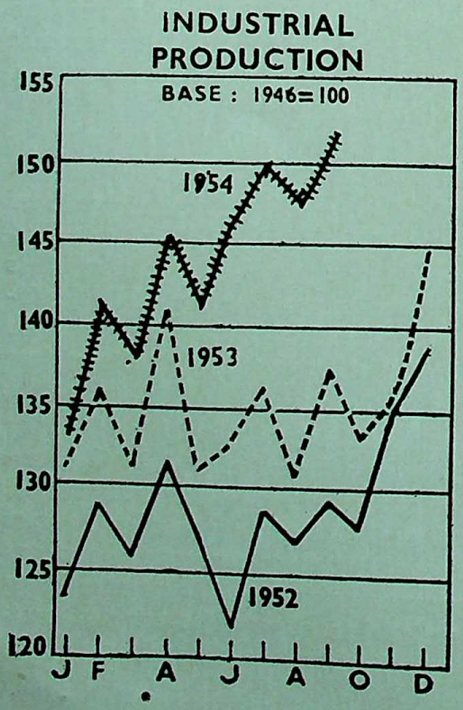
This upward trend was also witnessed in a large number of industries comprising the engineering, chemical and electrical products. The production of diesel engines has increased from 3,720 in 1953 to about 8,200 in 1954; the manufacture of hurricane lanterns and sewing machines which have secured export markets, went up by 25 per cent. There was a 35 per cent addition in the production of sulphuric acid. In

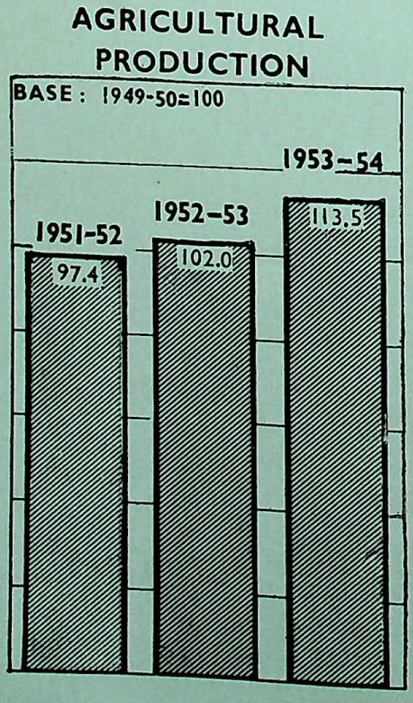
ECONOMIC TRENDS

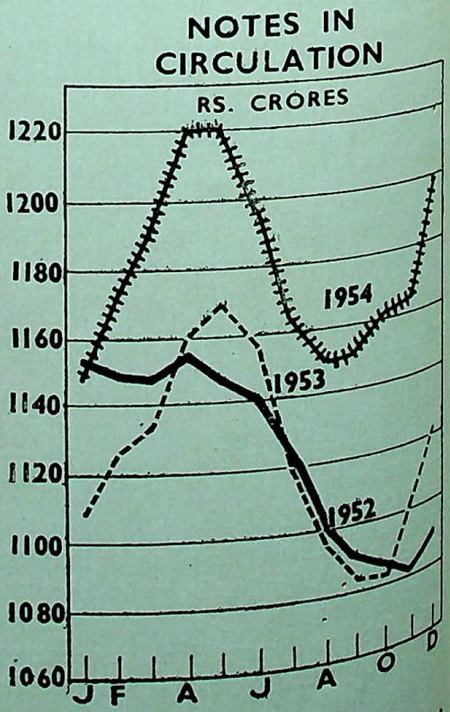












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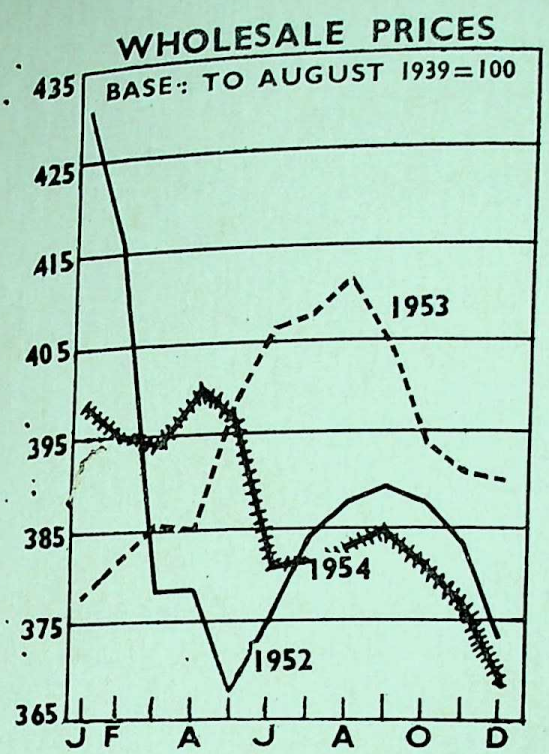

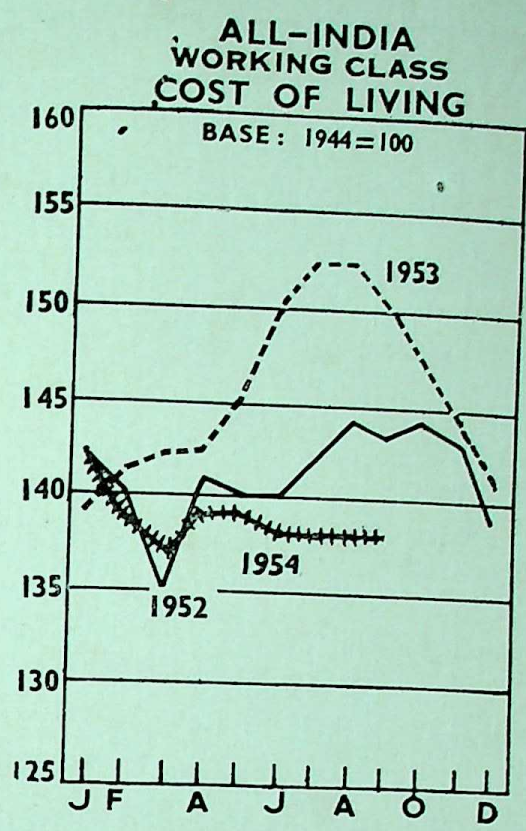

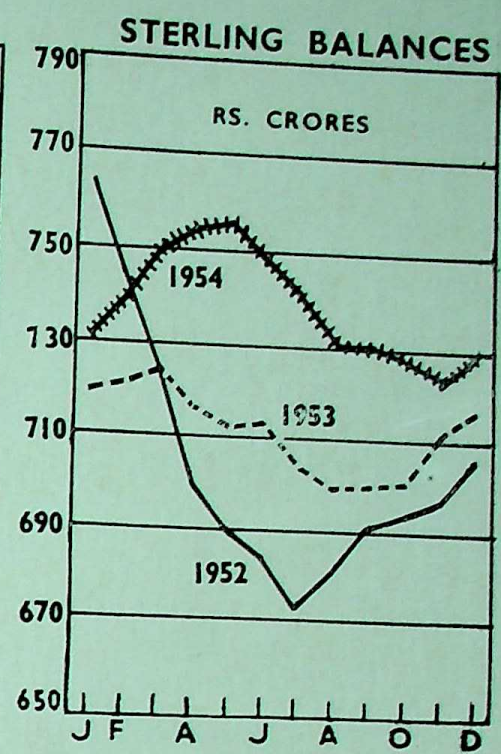

various other items there were moderate increases.

This expansion of capacity and output is evidence of the fact that the private sector of the economy has taken an optimistic view of the business conditions. The consequence of such a high level of production, especially of food and consumer goods, was the elimination of the remaining inflationary forces in the economy. The rate of development expenditure had been restrained, and total money supply had actually declined by the middle of the year.

While the All-India Cost of Living showed a tendency to remain stable at a lower level, the wholesale price level continued to decline steadily throughout the year, showing at the end a fall of nearly eight per cent from the level at the beginning of the year. Though such a continued fall is not a wholly satisfactory feature, its value lay in the encouragement, it gave to a higher tempo of development expenditure by Government in order to expand employment opportunities for the unemployed, whose registration at the Exchanges showed an increase.

The developments in foreign trade have also been helpful. The increase of cloth exports to about 900 million yards in 1954 has given proof of the competitive strength of Indian mill cloth and the country's ability to maintain this level of exports in the future. Towards the end of the year, the strong international position of tea and the high prices obtained in the British market proved an extremely favourable development for India which is the world's leading producer and exporter. Oil and oilseeds also figured more prominently on the export list because of much larger internal supplies.

While the total foreign trade has on the whole been stable, in the last three years the decline of import of foodgrains and raw cotton has caused a decline in the volume and value of imports, thereby maintaining the improvement in India's balance of payments. India's sterling balances have remained around Rs. 7,300 million during 1954, except for seasonal movements. This strong foreign exchange position has encouraged liberalisation of import policy in respect of a number of articles to enable token imports of quality goods and has resulted in an increase in customs revenue.

The high levels of production, the declining price level, a stable level of foreign trade and strong exchange position thus provided the background against which the plans for future development under the Second Five Year Plan were discussed during the year. The effect has been to make India's planning bolder and the outlook for the future highly encouraging.

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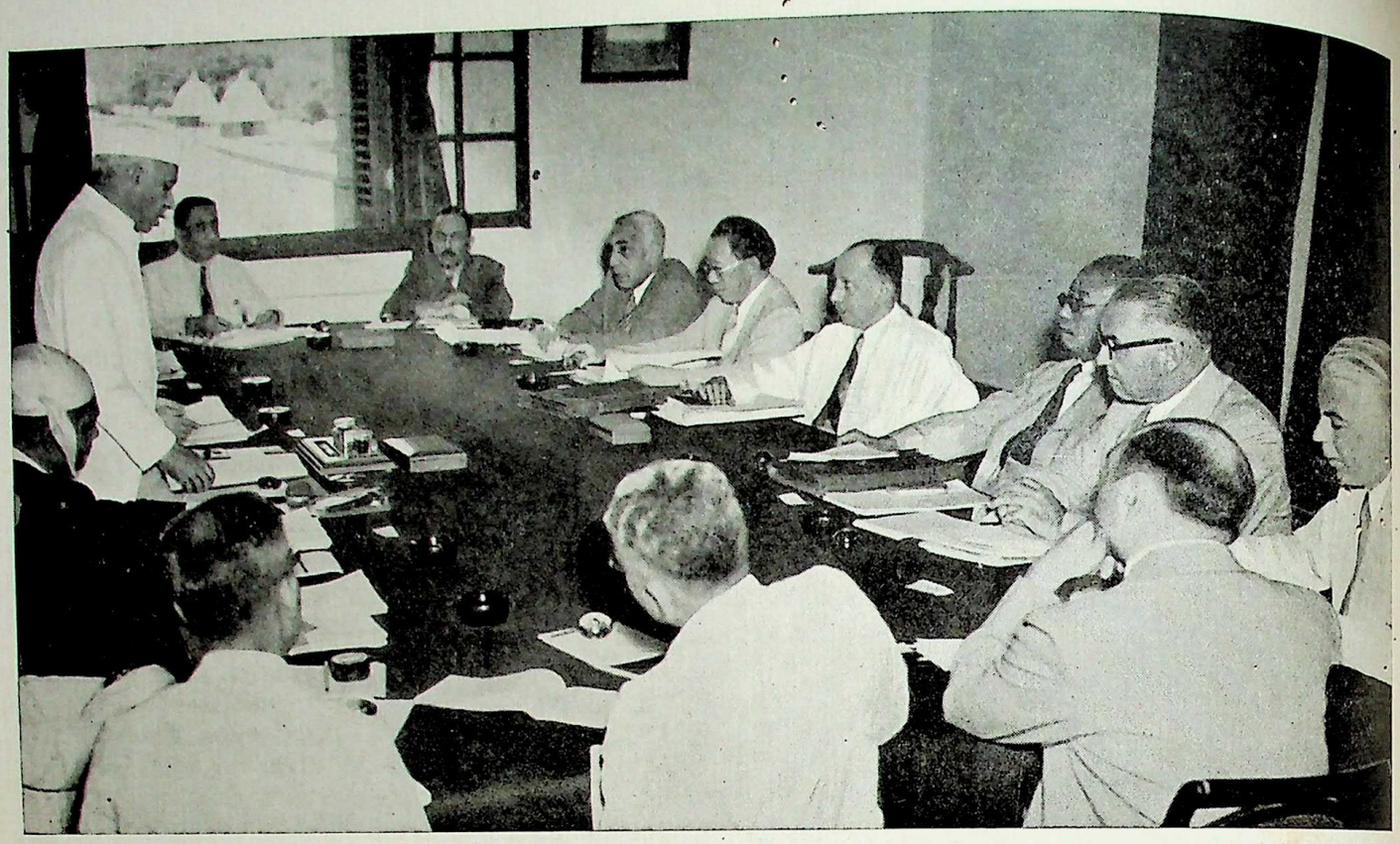

Jawaharlal Nehru addressing the Asian Conference on Indonesia in New Delhi

India and the United Nations

Sadath Ali Khan

THE year that has passed has been for India a year of remarkable success in the field of external affairs. In fact, 1954 may well be called India's year in contemporary international history. The Prime Minister's policy of peace gained an increasing number of supporters all over the world and the five principles of conduct in matters of foreign relations were also supported by millions of people. India's role in the rehabilitation of prisoners of war in Korea, the Colombo Conference which formed the basis of cease fire in Indo-China, the visits of Premier Chou En-lai and Marshal Tito to this country and Sri Nehru's visit to China and Indonesia have raised India's prestige in the world. It is a matter of satisfaction for Indians that for the first time Gandhiji's message of peace and non-violence is being effectively applied to international affairs.

Ever since the inception of the United Nations it has been India's policy to judge each issue according to its merits and to take an independent line in international affairs. It is wrong to say that India follows "a neutralist policy", because on numerous occasions Indian spokesmen have expressed very definite views on controversial matters firmly and with conviction. It is true, however, that our foreign policy is one of non-alignment with any power block and this has helped us to take an objective view and to serve as a bridge between the East and the West.

At the United Nations, India's greatest contribution has been her solution of the problem of prisoners of war in Korea which paved the way for the Korean Armistice. Outside the Untied Nations, India made a substantial contribution to the truce in Indo-China which no doubt helped in creating a favourable atmosphere in the U.N. for discussions of other important items like the question of disarmament.

At the United Nations, India is well-known for her dislike of imperialism and her support of colonial peoples everywhere. Under Article 73 (E) of the Charter the metropolitan powers are required to submit "statistical and other information of a technical nature relating to economic, social and educational conditions in respect of the non-self-governing territories under their charge," but the Charter did not provide for any machinery to examine the information thus submitted. It was at India's instance that a special committee of the General Assembly was set up to study the information furnished by the Administering Powers in respect of non-self-governing territories

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which number nearly 75 and are scattered all over the globe.

It is a recognised fact now that without the creation of such a committee there would have been no international supervision over the progress and development, if any, of the colonial peoples. India was eventually elected a member of the Ad Hoc Committee. Thereafter the committee's life was extended from year to year, and finally in 1949, India succeeded in having the committee's powers broadened and its term extended for three years.

This she achieved in spite of the fact that the colonial powers opposed her tooth and nail. It was said that the creation of this committee was a back-door amendment of the U.N. Charter but matters had gone too far and India with the support of like-minded nations succeeded in persuading, at least, some of the Administering Powers to furnish information on political progress in these territories. India may well claim some credit for making this body almost permanent.

At the Fourth Session of the General Assembly the Indian Delegation took a leading part in the solution of the problems of former Italian colonies of Libya, Eritrea and Somaliland. In the Sub-Committee of the Political Committee the leader of the Indian Delegation, the late Mr. B. N. Rau, submitted three separate resolutions. Later, in the full committee India submitted two amendments to the resolutions recommended by the Sub-Committee. These amendments were adopted by the Committee.

The Trusteeship Council accepted in its entirety the constitution for Somaliland drafted by Mr. B. N. Rau and now it forms a part of the Trusteeship Agreement. Thus, India made a historic contribution to the creation of the independent State of Libya, and provided the Trust territory of Somaliland with a constitution. She had also suggested that Somaliland should become independent after five years but the General Assembly decided that a period of ten years would be more reasonable. It is hoped that Somaliland will become an independent sovereign state in 1960. Eritrea was eventually amalgamated with Ethiopia.

Denmark, which was administering till recently the non-self-governing territory of Greenland, reported to the General Assembly that as she had now become full self-governing by virtue of her association with the Danish realm on a basis of equality, she would cease to transmit to the U.N. information under Article 73 (E) of the Charter. The General Assembly received the report of the Committee on information from non-self-governing territories which stated that the Com-

Mr. V. K. Krishna Menon (right), exchanging views with Mr Paul Martin, Acting Chairman of the Canadian Delegation at U. N.

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Mr R. K. Nehru (with glasses) at a U.N. meeting discussing the question of the treatment of Indians in South Africa

mittee was of the view that Greenland had attained a full measure of self-government and consequently fell outside the scope of Aticle 73(E) of the Charter. It adopted a resolution noting with satisfaction the achievement of self-government by the people of Greenland. India supported this resolution whole heartedly.

Although India was not a member of the Security Council during the year 1948-49, she took an active interest in the struggle for Indonesian freedom. She appeared before the Security Council a number of times as an interested State and participated in the council's discussion of this question.

In December 1948, the Dutch started hostilities in violation of the Renville Truce Agreement. India wanted to strengthen the hands of the U.N. Security Council and Prime Minister Nehru took the initiative by calling a Conference of Asian countries in New Delhi to consider the situation arising out of the action taken by the Netherlands. The Conference was attended by 15 countries and it passed a lengthy resolution suggesting a detailed course of action to be taken by the Security Council to solve the Indonesian question. It also recommended that all powers should be transferred to the United States of Indonesia by January 1, 1950. A copy of the resolution was sent to the Chairman of the Security Council.

During the later half of the Third Session of the General Assembly, India and Australia brought up this matter before the Assembly also. Finally the transfer of power took place in December 1949 and one of the major problems of our times was solved amicably through the intervention of the United Nations. India can take some credit for this happy settlement of an intricate issue.

Although the Disarmament Commission established by the General Assembly was directed by the Eighth Session of the Assembly to continue its efforts to reach agreement, the world's attention was not focussed on the subject until March 1954 when a series of test explosions of Hydrogen Bombs took place in the Pacific Islands.

On April 2, 1954, the Prime Minister of India made an important statement in Lok Sabha in the course of which he suggested, among other things, the conclusion of a "standstill agreement" in respect, at least, of the actual explosions, even if arrangements about the discontinuance of production and stock-piling of nuclear weapons must await more substantial agreements between those principally concerned. These proposals were brought to the notice of the U.N. by the Permanent Representative of India. The Disarmament Commission did not, however, take any specific action to include them in its report to the General Assembly and the Security Council.

The Sub-Committee of the Disarmament Commission held twenty meetings between April 23, and June 22, 1954, but could reach no agreement, although some very important proposals were considered by it. However, at the Ninth Session of the General Assembly, the Soviet Delegate announced that the Soviet Union was prepared to consider the Franco-British proposals of June 1954 as a basis for further

Dr Palar, the Indonesian representative to U.N., being welcomed by the late Benegal Narsing Rau, India's representative to U. N.

discussions. This important development eventually resulted in an unanimous resolution which charged the Disarmament Commission with the task of preparing (1) comprehensive proposals to be embodied in a draft international disarmament commission providing for the reduction of armed forces and conventional armaments, (2) total prohibition of the use and manufacture of nuclear weapons, and (3) establishment of international control through a controlled organ vested with the necessary powers.

The leader of the Indian Delegation, Mr V. K. Krishna Menon, put a series of questions in his first intervention in the debate on October 19, 1954, which sought clarification of certain expressions used in the

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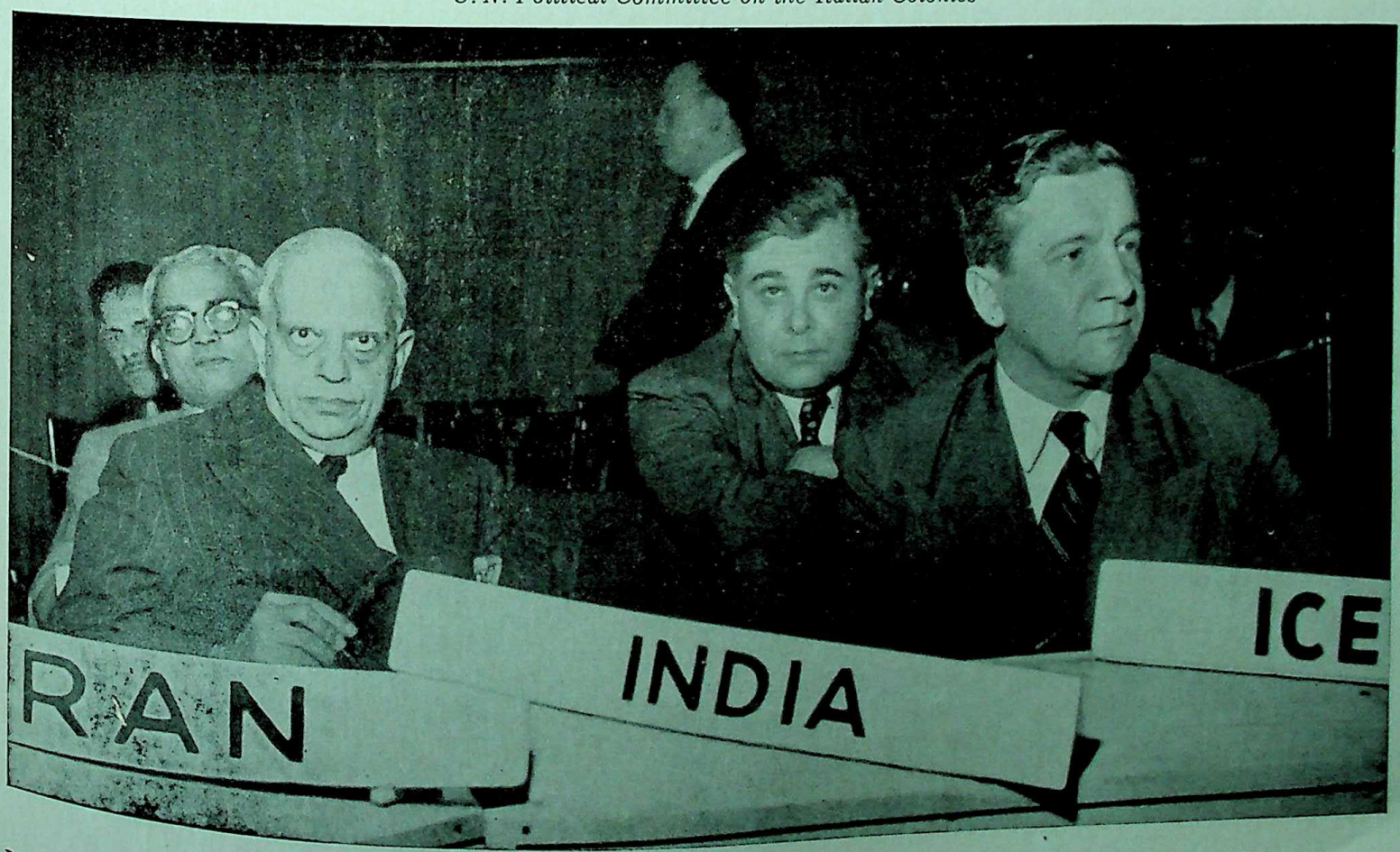
first Canadian draft resolution. The Western Powers explained these queries at length and helped considerably in making the Assembly understand the full implications of the phraseology used in the Western proposals. Later India introduced a separate draft resolution suggesting, among other things, that the Disarmament Commission study ways and means of establishing an "Armament Truce" pending agreement on a Disarmament Convention. The General Assembly eventually decided to refer the Indian proposal to the Disarmament Commission for appropriate consideration.

The plight of the Indian settlers in the Union of South Africa has always been a matter of great concern to India. India first raised the question of the disabilities of these people in 1946 and since then the question has been debated almost every year. The General Assembly passed a number of resolutions expressing its opinion that the treatment being meted out to the Indian settlers was contrary to the principles of the U.N. Charter and the treaty obligations existing between India and the Union of South Africa. Although every time the Union of South Africa raised the question of the competence of the General Assembly to consider this item, which according to her falls exclusively within her "domestic jurisdiction", the General Assembly rejected the plea and came out fully in defence of human rights and fundamental freedoms. At the Ninth Session of the General Assembly, a resolution was passed suggesting direct negotiations between India, Pakistan and the Union of South Africa, if necessary with the aid of a person to be designated by the Secretary-General of the U.N. It remains to be seen whether the Union of South Africa will retrieve her position while there is yet time for it.

At the Seventh Session of the General Assembly India and 12 other members had asked for the inscription of the item of race conflict in South Africa on the Agenda of the General Assembly. The Union of South Africa, whereupon, raised the question of "domestic jurisdiction" again but the General Assembly overruled the objection and proceeded to discuss the matter. Finally the resolution sponsored by India and 17 other countries was adopted. A three-member expert commission was thereby established to study the racial situation in the Union of South Africa and to report its conclusions to the Eighth Session of the General Assembly. The Representative of the Union of South Africa declared at the plenary session that his Government regarded the resolution "as ultra vires and, therefore, null and void." The South African Government declined to recognise the Commission appointed by the General Assembly and refused to furnish any information to it.

The Chairman of the Commission, Mr. Santa Cruz of Chile, presented the Commission's report to the Eighth Session of the General Assembly. The Commission came to the conclusion that the racial policies of the Union Government were contrary to the spirit of the Charter and to the declaration of Human Rights. It was of the opinion that the United Nations should request the Union Government to reconsider the components of its policy towards various ethnic groups.

Mr M. C. Setalvad, leader of the Indian Delegation, was an active member of the U. N. Political Committee on the Italian Colonies



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General Thimayya at a meeting of the N.N.R.C. in Korea

The General Assembly after discussing the report passed a resolution sponsored by India and 16 other states requesting the Commission to continue its studies and suggest measures which would promote a peaceful solution. The recent session of the General Assembly passed another resolution by a vote of 40 in favour, 10 against and 10 abstentions inviting the Union Government to reconsider its position and respect human rights without any racial distinctions. According to this resolution the Commission is to keep under review the problem of race conflict in South Africa and to submit a report to the 10th Session of the General Assembly.

These debates seem somewhat fruitless and the cynics are inclined to shrug their shoulders, but in fact U.N. discussions on racial problems keep the world attention focussed on the conflict that is ever present within the territories of the Union Government.

It is unfortunately true that at the United Nations political discussions and controversial debates find more space in the world press than matters dealing with economics, health and education. It seems that there is a craving for excitement and what is known as "hot news", whereas the quiet and patient labour of delegates serving on non-political committees is not given sufficient prominence. Perhaps one such case is that of SUNFED—the Special United Nations Fund for Economic Development.

The basic idea of SUNFED is that the balanced development of the world economy is a necessary condition for promoting such international relationships as are propitious for the maintenance of peace and world prosperity; that the economic development of the under-developed countries is of essential importance not only for them, but also for the industrialised countries; that the present rate of development of under-developed countries in general is unsatisfactory and that the present world situation calls for accelerating the development of these countries.

In pursuance of these ideas, the ECOSOC at its 14th Session (1952) appointed a committee of Experts to prepare a detailed plan for the establishment (when circumstances permit), operation, management, and control of a special fund for grants-in-aid on low interest and long term loans to under-developed countries for the acceleration of this economic development.

The Committee made detailed recommendations concerning the establishment of the Fund. India has been taking an active part in the efforts of the U.N. to create such a fund. But the major industrialised countries like the U.S.A., the U.K. and Canada have not taken kindly to this proposal as they maintain that international disarmament is an essential pre-condition to its establishment. On the other hand, India and some other countries believe that it is neither necessary nor desirable to link this with disarmament as the sum of $250 million required for starting the fund is only a small fraction of the global defence expenditure.

At the Ninth Session of the General Assembly, India and 19 other countries submitted a joint draft resolution which would decide in favour of establishing a Fund and suggest various preparatory measures. There were two other resolutions, one by Belgium urging Governments to review their positions with respect to the Fund and another by the Netherlands which was also in favour of establishing the Special Fund. A working group was formed to evolve, if possible, a commonly acceptable resolution. Finally, a resolution was produced which was adopted unanimously.

It expresses the hope that a special fund would be established "as soon as practicable," and extends the appointment of Mr. Scheyven, the Special Rapporteur, for another year to enable him to continue his consultation with various Governments and directs him to report on the form, functions, and responsibilities which such a fund might have and other allied matters.

Nawab Ali Yawar Jung, the Indian Delegate, who took a leading part in the discussion of this item as well as in the drafting of the final resolution characterised it as distinct advance over the previous year's position. There is thus great hope that before long the U.N. would agree to set up a special fund to help in the economic advancement of the under-developed areas of the world.

Today India's voice is heard with respect at the U.N. There is genuine admiration for her bold stand, and even those who disagree with her try to understand her policies and guiding principles. It is no secret that speeches of Indian Delegates on Colonial questions are read eagerly by people living under foreign rule. There is a good deal of friendly co-operation between India and the Arab-Asian group, and between India and the Commonwealth countries. The South American countries also find much in common with us, and treat us with courtesy and friendliness. Thus the foreign policy of our Prime Minister, who is loved and admired by millions all over the world has brought India enormous prestige and honour in the international forum.

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India's Mineral Resources

V. R. Khedker

INDIA with its area of 1.2 million square miles and population of 357 millions is a big country. However, no nation big or small can be entirely self-sufficient in regard to its mineral resources, as minerals are created by nature in course of evolution over millions of years which cannot be created anew by human efforts. Mother nature has been reasonably generous in endowing India with her riches. No doubt, man-made political divisions have resulted in the transfer of some of India's coveted resources to Pakistan. Due to the separation of Burma in 1937, India lost possession of oilfields of Irrawaddy Valley, of the extensive tin and tungsten ore deposits of Tenasserim and of the ruby and jadeite mines of Mogok and Mogaung respectively. By the creation of the State of Pakistan in 1947, India further suffered losses of the oilfields of West Punjab; of the coal, salt and gypsum resources of the Salt Range and the antimony ores of Chitral.

Yet, whatever still remains is not insignificant by any means. There are certainly some minerals for which India has to depend largely or entirely on foreign imports, but there are many more in which India may be considered self-sufficient for her needs in the immediate future and still others in which India has exportable surpluses of which a few are of world importance.

In this article, I propose to confine myself to an appraisal of India's mineral resources as existing today and to examine her relative strength and weakness in respect of each mineral. The table at the end would give a fair idea of the value and quantity produced of the chief minerals in India during 1953.

Apatite

Only a small output of apatite is obtained from Singhbhum in Bihar and Trichinopoly in Madras. The deposits in Singhbhum are in the form of lodes and veins and occur intermittently for a distance of 40 miles. The estimated reserves of this area are 700,000 tons approximately. The Trichinopoly deposits are of phosphatic nodules and the reserves are estimated at 2 million tons. The average P_2O_5 contents of Indian ore range between 20 to 30 per cent. Production in Singhbhum was reported in 1953 for the first time since 1938. The entire production of the country is used for manures which is estimated to meet only 5 per cent of the country's requirements of phosphatic manures, the balance being imported.

Asbestos

India has limited resources of asbestos mainly in Andhra, Bihar, Mysore and Rajasthan. Of the two chief varieties found in India, the chrysolite (serpentine) asbestos which is the flexible variety amenable to spinning and hence more valuable, is found in Cuddapah (Andhra), while the other deposits yield the tremolite type which is less flexible. In 1953-54, 80 thousand tons of raw asbestos valued at Rs. 5,000,000 and a large quantity of manufactured asbestos valued at Rs. 5,500,000 was imported. India is, therefore, apparently deficient in this mineral.

Barytes

No estimates of India's resources of this mineral have been made, though they are probably adequate for country's requirements. The mineral is used mainly in the paint and petroleum industry in India. The major portion of the production is exported. The production reported only from Andhra, is persistently going down in recent years. From an average annual output of 24,000 tons during the 5 years ending in 1949, the production of 4,057 tons only in 1953, is a big fall indeed. The decrease is ascribed to a great fall in demand of this material from the oilfields of the middle east countries where it is used in oilwell drilling.

The mineral is also reported to occur in Alway, (Rajasthan), Manbhum and Singhbhum districts of Bihar and Gangapur in Orissa, but the deposits are not large.

Bauxite

The reserves of India's bauxite of all grades are estimated roughly as 250 million tons of which high grade reserves (about 50 per cent Al_2O_3) are of the order of 25 million tons. The deposits of bauxite are widely distributed in India, but the major supply comes from Bihar, Bombay, Madhya Pradesh, Kashmir and Madras.

India first began producing aluminium ingots in 1943 from imported alumina. The alumina now used in the manufacture of aluminium in India is being produced in local Alumina and Reduction plants. However, India's production of this metal is not sufficient for her needs as more than 50 per cent of her consumption in 1953 was imported. With the setting up of more alumina plants, India would be able to satisfy all her demands for internal consumption and would still be able to spare some bauxite for export.

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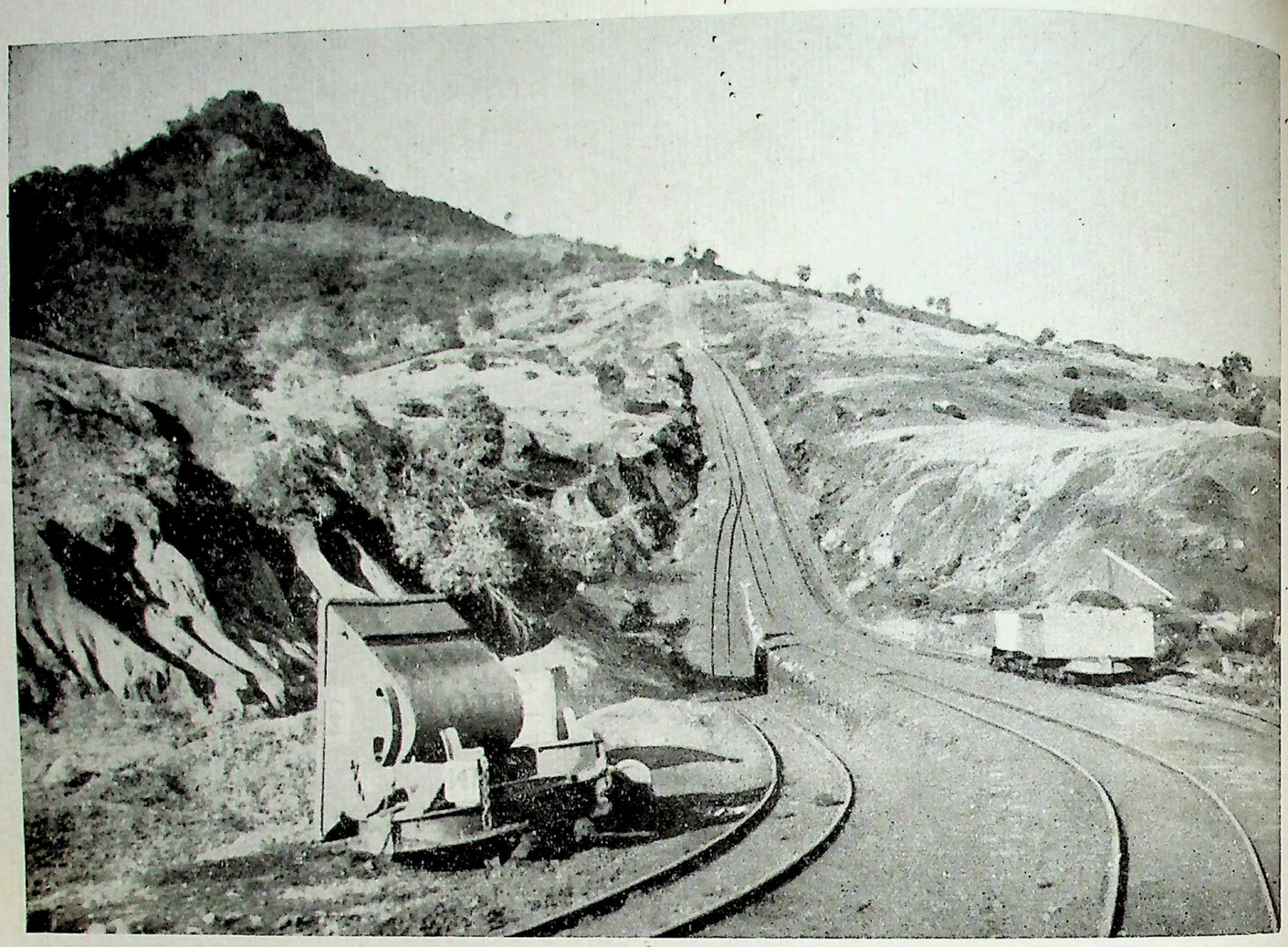

Sulaipat ore mine, Bihar

Bentonite

Only limited quantity of bentonite is available from Bihar, Kashmir and Rajasthan. No estimates of reserves are available, but it is hoped that more intensive exploration and prospecting may bring to light other deposits. The mineral is not being exported at present and the entire production of 292 tons during 1953 is believed to have been consumed in India. Bentonite is used in petroleum, foundry and chemical industries.

Chromite

According to the available data, India's known reserves of chromite are approximately 200,000 tons of high grade ore containing above 45 per cent Cr_2O_3, while low grade ore reserves are estimated to be several times more. The mineral is chiefly obtained from Andhra, Bihar, Mysore and Orissa, while it is known to occur in Bombay and Kashmir also. A sizeable portion of chromite produced in India is exported. The exports during 1953 totalled 15.3 thousand tons as against a production of 64.8 thousand tons. The domestic consumption of chromite is chiefly confined to the manufacture of chrome bricks and refractories and to a smaller extent in the tanning and dyeing industries. However, some recently found new deposits, which are not yet estimated thoroughly are expected to increase our reserves of this strategic mineral.

Clays

India has abundant resources of clays which are distributed in almost every State of the country. Besides the deposits of china clay those of fire clay and other clays are also widespread. The entire production in India is used for internal consumption in the manufacture of pottery, building bricks, cement, soap and for colour washing. China clay is also used in the textile, rubber and paper industries as fillers, while the fire clay is used for manufacture of fire bricks. Some superior variety of china clay is imported for use in cotton textile, paper and rubber industries, but it is understood that these imports can be considerably cut down if the present methods of clay washing and grading are improved.

Coal

India's resources of all workable coals occurring within one thousand feet of the surface have been broadly estimated at 20,000 million tons, of which good quality coal would amount to 5,000 million tons. The reserves of coking coals for metallurgical uses were estimated at 2,000 tons by a Joint Survey Party of the Geological Survey of India and the Chief Inspectorate

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of Mines. In addition to this, the estimated reserves of tertiary coal are of the order of more than one thousand million tons. The occurrences are distributed over quite a few States of which Bihar and West Bengal have the largest coalfields contributing about 82 per cent of the total output.

Generally India's coal resources, besides being able to meet her internal requirements for a long time to come, are considered enough to justify the establishment of an export market on a permanent basis. However, the reserves of the coking coal are considered limited and their present use for non-metallurgical purposes and wasteful mining methods present some problem. The question of coal is now completely entrusted to the National Coal Board and it is to be hoped that the implementation of the recommendations made by various Investigating Committees so far, would result in removing the defects in this vital mineral industry.

Copper Ore

The position of copper is not very encouraging at present. Although the occurrences have been recorded at Darjeeling (West Bengal) Singhbhum and Hazaribagh (Bihar) Balaghat, Jubbalpur and Sagar (Madhya Pradesh), Khetri (Rajasthan), Anantpur and Nellore (Andhra) Chhota Udaipur (Bombay) and in Sikkim, the only deposits now being worked, are those of Singhbhum. The entire copper production by the Indian Copper Corporation Refinery at Ghatsila is fire refined and is mostly used for making utensils, while the country is wholly dependant on foreign sources for her requirements of electrolytic copper. Besides this, large quantities of wrought and unwrought copper are also imported annually. Much could be done in making India as self-sufficient as possible in respect of copper by reopening old abandoned mines and working the known deposits by enhancing the refining capacity and above all by concerting our attention to the production of electrolytic copper.

Corundum

In addition to the working mines in Hassan and Mysore districts (Mysore) and Rewa (Vindhya Pradesh), the corundum deposits are also known to occur in Khasi Hills (Assam) and South Kanara and Salem district of Madras. There was only a small production of 273 tons, of which some quantity is exported, but the statistics are not available. The mineral is chiefly used as an abrasive.

Diamond, Emerald and Sapphire

Occurrences of diamond are recorded in Cuddapah, Anantpur and Kurnool districts of Andhra, Bellary in Mysore and in Panna, Charkhari, Bijawar and Ajaigarh districts of Vindhya Pradesh. However, almost entire recorded production comes from Panna. Emeralds are chiefly obtained from Udaipur in Rajasthan and from Ajmer. Diamonds worth about 91 thousand rupees were imported in India during 1953.

Fuller's Earth

India's supply of this mineral is chiefly obtained from Bikaner and Jodhpur in Rajasthan and a little is also contributed by Madhya Pradesh. Entire production is used for internal consumption.

Feldspar

Workable occurrences of feldspar are located in the States of Ajmer, Bombay, Bengal, Bihar, Madhya Pradesh, Madras, Mysore, Rajasthan and Vindhya Pradesh. The entire output is utilised in the country mainly in the ceramic industry. There are large untapped resources which can be developed as the demand increases.

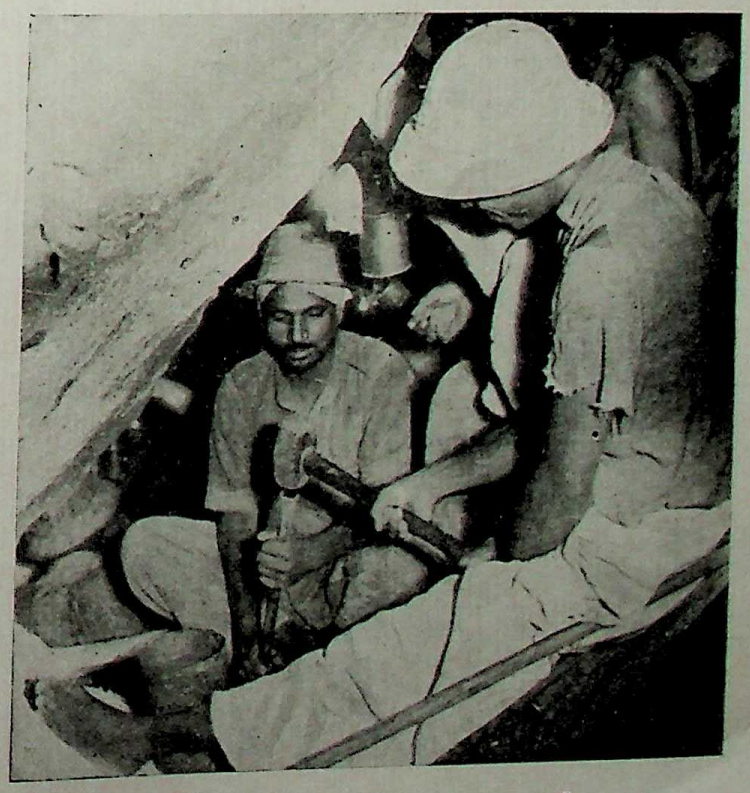
Gold

Reserves of gold in India are considered just about sufficient to meet the present needs, though small quantities continue to be imported. Considerable apprehension is, however, felt for the future as richness of the ore decreases and working cost increases at great depth. Even today Kolar Gold Fields which yield almost the entire output in India are being worked at a depth of over 9,500 ft.

Gypsum

The total reserves so far estimated are roughly of the order of 74 million tons, of which about 70 per cent are in Rajasthan, about 22 per cent in Madras and the rest in Saurashtra, Kutch and Himachal Pradesh. Till recently gypsum was mainly used in cement industry in India, but with the setting up of Sindri and Alwaye Fertilizer Factory, for which high quality gypsum is the main raw material, this mineral has assumed strategic importance and search for new gypsum deposits has become an imminent necessity.

Miners operating underground in the Mysore Gold Mines



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Graphite

Graphite occurrences in small quantities are distributed in various parts of India. The quantity produced falls short of the total requirements by about 25 per cent which is met by imports. The mineral is mainly used in foundry, pencil and paint industry in India.

Ilmenite

Ilmenite and other titanium minerals like rutile, titaniferous magnetite etc., are widely distributed in India along the beach sands of Travancore and the east and west coasts. India is one of the largest producers of ilmenite in the world. Reserves are broadly estimated at several million tons. Almost entire output is exported out of India mainly to U.S.A. and U.K. Rutile occurs as a minor constituent of ilmenite sands of Travancore from which it is recovered in zircon fraction. The whole output is exported. Titanium mineral is chiefly used in manufacture of pigments welding rod coating and in the ceramic industry.

Recently, titanium has attained perhaps the highest importance as strategic material because the metal and its alloys have been found to have better qualities than the strongest steels and yet are lighter in weight than those steels. These alloys are expected to replace steel in aircraft and other traction machines and several heavy parts of other machinery. Its anti-corrosive qualities make it invaluable in naval construction. Thus to-day there is world wide propaganda as regards its highly strategic value and hence there is now a race for securing sources of continuous supply of the mineral of this valuable metal namely Ilmenite. Our resources of ilmenite, great as they are, present to us a wonderful opportunity of commencing proper exploitation for export and as also for manufacture of titanium metal and its alloys which would add greatly to India's subsequent position in the world as supplier of strategic mineral.

Iron Ore

India has vast resources of iron ore. They are considered so vast indeed as to promise great reserves even after majority of the present producing countries have exhausted their workable deposits. Extensive deposits occur in Andhra, Bihar, Madhya Pradesh, Mysore and Orissa. Rough estimated reserves of major deposits in India are of the order of 30,000 million tons, of which those of South Singhbhum and Bihar alone are of the order of 8,000 million tons of good quality ore containing over 60 per cent Fe.

The Iron & Steel Industry in India is well established and more emphasis is being given for further expansion to meet the home demand resulting in the decision for setting up of the Rourkela and Bilhai Steel Plants. Establishment of one more plant is in the offing. After the internal demand is satisfied, there would be plenty of scope for export of such products abroad. The day will surely come when India would dominate the market for ferrous metals in the east and perhaps further afield instead of exporting the raw ore which she does at present to the tune of nearly 30 per cent of her production.

Kyanite

Good workable deposits of kyanite occur in Bihar while smaller deposits are also known to occur in Andhra, Mysore and Orissa. The Lapsa Buru kyanite deposit in Kharsawan is the largest of its kind in the world and the reserves of this deposite have been estimated at about 300,000 tons within a depth of a few feet. Major portion of the quantities produced are exported and only a part is used in India for refractories. With expansion of glass and ceramic industries, the domestic market for kyanite is bound to increase.

Lead Ore

Small occurrences of lead ore have been recorded at various places in India, the most important of which are those of Zawar in Rajasthan. The indicated and inferred estimates of reserves of lead-zinc ore in this area are of the order of 10 million tons of ore of all grades ranging from 3 to 12.5 per cent of combined metals, the ore being richer in zinc than in lead. Quantities produced fall very much short of the total internal demand and India is almost entirely dependent on foreign countries for her requirements of lead and zinc.

Magnesite

The chief producing areas of magnesite are the Salem district of Madras and the Hassan and Mysore districts of Mysore. Besides these, smaller deposits are also known to occur in Coorg, Rajasthan and Uttar Pradesh. The exact reserve figures are not available. Nearly half of the entire production is exported abroad and the residue is consumed in India in the manufacture of refractory bricks etc.

Manganese Ore

The reserves of manganese ore in India are undoubtedly considerable, but no reliable estimates have yet been made. Extensive workable deposits are distributed in Bihar, Orissa, Madhya Pradesh, Mysore, Bombay, Andhra and Rajasthan. About 90 per cent of India's production is exported abroad. The outflow of this valuable mineral in raw state to foreign countries is considered to be a serious draw back and considerable attention is being given to the manufacture of ferro-manganese in this country. Five licences have already been given and it is expected that some ferro-manganese plants will soon be set up in India. At present very small quantity of manganese ore is consumed by the Indian iron and steel smelters. Certain limited amount of manganese dioxide is also produced in India, a greater part of which is exported.

Mica

India is the largest producer of muscovite block mica and mica splittings. She meets about 80 per cent of world demand of dressed mica blocks condensers and splittings. Deposits of this mineral are

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worked in Andhra, Bihar and Rajasthan. Almost entire output is exported abroad and very little mica is consumed in the indigenous industries. Besides, mica mining industry is not run on scientific lines. The implementation of the recommendations of the Mica Enquiry Committee would be of help in remedying the defects and in greater utilisation of mica in the country.

Ochres

Ochres are well known as mineral earth pigments. Occurrences are fairly widespread in India, chief producing areas being Madhya Pradesh, Vindhya Pradesh and Saurashtra. The entire production is retained for internal consumption and is considered sufficient to meet the home demands for natural red and yellow paints.

Pyrite

Deposits of pyrite are found in Kashmir, at Taradevi in Simla, at Amjor in Bihar and in Chitaldurg district of Mysore. There is also some pyrite associated with gold deposits of Wynad district of Madras. Exploratory mining work was recently undertaken by the Geological Survey of India at Amjor. In the small part of the area explored, the average grade of ore with 40 per cent sulphur was obtained.

Petroleum

For her requirements of petroleum products, India is very much dependent on their imports from abroad, her resources being meagre in this mineral. So far, North-Eastern Assam is the only producing area in Indian Union though investigations have been undertaken to discover new oilfields and to prove their workability by the latest improved prospecting practices. In 1953, India imported 891 million gallons of petroleum, valued at Rs. 776 million.

Salt

Salt is produced in India from sea water, saline and bedded deposits. About 75 per cent of the supplies are recovered from sea water and the rest come from salt lakes of Rajasthan, the sub-soil brine in the Ranns and the rock salt beds of Mandi and Himachal Pradesh. India is now quite self-sufficient in regard to her requirements of salt and in fact exported about 275 thousand tons which represents about 10 per cent of the production.

Saltpetre (Potassium Nitrate)

Saltpetre occurs as natural efflorescence in extensive areas in Bihar, U.P. and East Punjab. Crude saltpeter is used as manure, while refined saltpeter is consumed in the manufacture of fire works, blasting-powder, soap and matches and in the glass, ceramic and tanning industries.

Sillimanite

Deposits of sillimanite are known to occur in Assam, Madhya Pradesh, Mysore and Vindhya Pradesh. The estimated reserves of the Khasi hill deposits in Assam which is the chief producing area, are of the order of 230,000 tons. Apart from this, sillimanite is also obtained from the beach sands of Travancore. Its main use is as raw material for alluminous refractories. It is, however, not utilised in India for manufacture of various refractory goods in appreciable quantities and much of the production is exported.

Silver

India is deficient in this metal and has to import large quantities. Internal production is capable of meeting just about 8 per cent of the total demand.

Steatite

Steatite or soap stone is well known as French chalk, of which there are widespread deposits in India. Bulk of the production is consumed in India, while some quantity is exported. The resources are considered capable of meeting any local demand. It is chiefly used in the paper, rubber and chemical industries.

Vermiculite

This mineral is imported in India for the manufacture of insulating material in pipes, furnaces and ovens. Now that the supplies of indigenous vermiculite have begun to be available from Kolar and Hassan districts of Mysore (the first official production was reported in 1950), India's dependence on foreign vermiculite is likely to diminish.

Besides the minerals mentioned above, there are materials like building-stones, slate, marble, limestone and dolomite, in which India can be considered as self-sufficient for her present needs and for those of the immediate future. There are, however, some others, such as tin, molybdenum, nickel, mercury, platinum and fluorides of which there are none or nearly negligible known occurrences. This would reveal that although India is not enormously rich in minerals her resources are not negligible. A wide range of useful material is obtainable here and planned utilisation in the interests of national requirements would make India more and more self-sufficient.

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MINERALS PRODUCED IN INDIA (1953)

S.No.	Mineral	Quantity	Value (Rs.)	Rank in Value	Producing States in order of value
1.	Apatite	4,395 tons	42,082	32	Bihar, Madras.
2.	Asbestos	568-14 ,,	547,883	22	Andhra, Bihar, Rajasthan, Mysore, Madhya Bharat.
3.	Barytes	4,057 ,,	71,449	29	Andhra.
4.	Bauxite	70,848 ,,	788,966	19	Bihar, Madhya Pradesh, Bombay, Madras.
5.	Bentonite	292 ,,	3,255	37	Bihar, Rajasthan.
6.	Building Material (a)	.. ,,	40,000,000	6	
7.	Calcite	2,299 ,,	32,216	34	Saurashtra, Andhra.
8.	China Clay	109,370 ,,	1,958,674	13	Bihar, Orissa, Madhya Pradesh, Mysore, Saurashtra, Madras, Delhi, Travancore-Cochin, Vindhya Pradesh, Hyderabad, Andhra, Bengal.
9.	Chromite	64,770 ,,	2,529,782	11	Orissa, Mysore, Bihar, Andhra.
10.	Fire Clay	71,979 ,,	553,629	21	Orissa, Bihar, Madhya Pradesh, West Bengal, Vindhya Pradesh, Saurashtra.
11.	Coal	35,979,167 ,,	527,626,928	1	Bihar, West Bengal, Madhya Pradesh, Hyderabad, Vindhya Pradesh, Orissa, Assam, Rajasthan.
12.	Copper Ore	238,010 ,,	11,413,998	8	Bihar, Madhya Pradesh.
13.	Corundum	273 ,,	25,973	27	Vindhya Pradesh, Mysore.
14.	Diamond	2,207 carats	561,620	10	Vindhya Pradesh.
15.	Emerald	550,938 ,,	230,374	24	Ajmer-Merwara, Rajasthan.
16.	Feldspar	3,746 tons	39,567	33	Ajmer-Merwara, Mysore, Madhya Pradesh, Madras.
17.	Fuller's Earth	1,722 ,,	71,667	20	Rajasthan, Madhya Pradesh.
18.	Gold (b)	221,960.5 ozs.	50,822,712	5	Mysore, Hyderabad, Other areas (Madras, U.P. & E. Punjab).
19.	Graphite	767 tons	69,092	30	Orissa, Andhra, Madhya Pradesh, Hyderabad.
20.	Gypsum	582,713 ,,	3,814,338	10	Rajasthan, Madras, Kutch.
21.	Ilmenite	215,130 ,,	9,202,558	9	Travancore-Cochin, Bombay.
22.	Iron Ore	3,844,911 ,,	27,969,751	7	Bihar, Orissa, Mysore, Andhra, Bombay, Madhya Bharat, Rajasthan.
23.	Kyanite	15,034 ,,	2,349,004	12	Bihar, Mysore, Andhra.
24.	Lead (b)	1,694 ,,	1,839,485	14	Rajasthan.
25.	Magnesite	92,748 ,,	1,824,889	15	Madras, Mysore.
26.	Manganese Ore	1,897,698 ,,	294,143,190	2	Madhya Pradesh, Orissa, Andhra, Bombay, Mysore, Bihar, Madhya Bharat, Rajasthan.
27.	Mica (c)	245,400 cwts.	84,753,264	3	Bihar, Rajasthan, Andhra, Ajmer-Merwara, Madras, Madhya Pradesh Mysore, Pepsu.
28.	Ochres	15,173 tons	179,353	26	Vindhya Pradesh, Mysore, Saurashtra, Madhya Pradesh, Andhra, Hyderabad, Madras, West Bengal.
29.	Pyrites	277 ,,	15,512	25	Bihar.
30.	Rutile	104 ,,	12,534	36	Travancore-Cochin.
31.	Salt	2,972,059 ,,	54,732,000	4	Bombay, Saurashtra, Madras and Andhra, Rajasthan, Kutch, Travancore-Cochin, Orissa, Himachal Pradesh, Bengal.
32.	Saltpetre (e)	2,777 ,,	1,502,800	17	East Punjab, Uttar Pradesh, Pepsu, Delhi.
33.	Sillimanite	4,941 ,,	420,824	23	Assam, Madhya Pradesh.
34.	Silver (b)	16,864 ozs.	64,418	31	Mysore, Hyderabad.
35.	Steatite	28,571 tons	1,643,041	16	Rajasthan, Madhya Pradesh, Bihar, Hyderabad, Andhra, Mysore, Uttar Pradesh, Orissa.
36.	Tin Ore	0-4 ,,	892	38	Bihar.
37.	Wolfram	15 ,,	180,000	25	Rajasthan.
38.	Zinc (concentrates)	4,302 ,,	1,170,280	18	Rajasthan.
	TOTAL (d)	—	1,123,768,050	—	

(a) Estimated.
(b) Figures of metal given in absence of ore figures.
(c) Figures of exports.
(d) Excluding the value of petroleum but incluing the value of "other clays" estimated at Rs. 5 lakhs.
(e) Incomplete.

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The Philosophy of Radhakrishnan

Shiva Murti Tewari

THE Absolute Idealism of Radhakrishnan is the result of his spiritual experience and synthetic vision. It is immediately based on the wide study and deep understanding of the history of philosophy, Eastern and Western. As a harmonious blend of intellectualism, intuitive experience and love for humanity, it is a unique example of a philosophical scheme.

Professor G. P. Conger speaks of his philosophy in these words: "Radhakrishnan has developed this portion of the great tradition (intuitive absolute idealism) in a fresh rendering of 'the perennial philosophy'. Less ponderous than Royce, less meticulous than Bradley, less involved than Hegel, he has made idealism flow from a deep spring. By comparison Eucken is provincial and Keyserling is trivial. Not since Fichte and Schelling has there been such a precipitate stream of inspiration. He has surpassed the personalists in his philosophy of spirit and rivalled the pragmatists in promulgating a philosophy of life."

It is impossible for anyone to read Radhakrishnan's writings, packed as they are with clear thinking and lucid expressions, without being conscious that he is in contact with a mind gifted with the power of very fine penetration and with profound spirituality. With his acute feeling of the immeasurable world, his stirring gaze into the abysmal mysteries of spirit, his unswerving resolve to say neither more nor less than what could be proved, Radhakrishnan stands out as an idealist philosopher of the first rank in the somewhat motely crowd of the scientific metaphysicians of the modern world.

Through the massive and at the same time subtle dialectic of Radhakrishnan there shows forth a vivid, emotional temperament, without which philosophy tends to be a mere game of logic. A master of clear and vigorous thinking, he is also, like Plato, a master of a fine and forceful prose which now and then rises to heights of poetic diction, and we feel that he adds the sensibility of the artist to the intellect of the scholar in him.

The rays of his genius have illumined the dark places of thought and soothed the sorrows of the most forlorn heart. His philosophy has a self-satisfying wholeness characteristic of works of art.

In fact the history of Indian philosophy is a continuous affirmation of one and the same spiritual experience differing only in form and in emphasis on different aspects of the real, as necessitated by the demand of the age, *yuga dharma*. Philosophic development in India has to be understood in this light. Hence it can very well be explained why Indian thinkers were less inclined to write original books in the Western sense and accepted the humbler task of commenting upon the triple texts (Prasthanatraya), the Upanishads, the Gita and the Brahma-Sutra which form the basis and background of Hindu philosophy and religion.

Originality for them consisted in their realisation of the truth and giving expression to it according to the needs of the age in order to awaken people to self-knowledge, *atma-jnana*. This does not, however, mean that they were merely scholastic, following the letters of the scriptures, but creative geniuses who evolved new forms and expressions and methods best suited to the spiritual demands of the people changing through the ages

Indian philosophic tradition has, therefore, remained identical in spirit, though ever-changing in form and expression. Great leaders of Indian thought from the hoary past down to the impetuous present had taken recourse to the Vedas, the original fund of spiritual experience, in order to establish their own faiths, to found their own systems of philosophy. It is only in the light of this background that we can fully understand and appreciate Radhakrishnan's philosophy as well as his multifarious contributions to the world of modern thought.

The key concepts of Radhakrishnan's philosophy are spirit, intuition and religion. All his ideas centre round these concepts. We may conveniently discuss his philosophy under the four heads: (i) Metaphysics, (ii) Intellect and Intuition, (iii) Ethics, and (iv) Religion.

Methaphysics is consideration of what is implied in the fact of experience. Its problem is not one of observing and tabulating the facts of consciousness; it is concerned with what the existence of facts implies regarding the nature of reality. Let us examine Radhakrishnan's metaphysical views:

Spirit: The cream and quintessence of Radhakrishnan's teaching in all its forms is the presence of the "spirit" in man. This is the basis of all values for Radhakrishnan. According to him philosophy of culture turns out to be the philosophy of spirit. The idea of spirit, as we know, is the root concept of Hegelianism. So also is it of Radhakrishnan's philosophy.

But unlike many Hegelians and many Indian idealists, he conceives the spirit not as a substance, but as life. In agreement with contemporary physics,

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and the modern realists like Whitehead, Radhakrishnan rejects the old substantive concept of reality. "Spirit," says Radhakrishnan, "is life not thing, energy not immobility, something real in itself and by itself, and cannot be compared to any substance subjective or objective." Spirit is the presupposition of everything that lives, moves and has its being in this world of *samsara*.

The spirit in man is also the reality underlying all existence. Radhakrishnan observes: "If we are asked to define what the spirit in man is, it would be difficult to give a definite answer. We know it, but we cannot explain it. It is felt everywhere though seen nowhere. It is not the physical body or the vital organism, the mind or the will, but something which underlies them all and sustains them. It is the basis and background of our being, the universality that cannot be reduced to this or that formula." Spirit is our root and we are its offshoots. Radhakrishnan is of the view that this spirit can be realised fully in religious intuition. He, therefore, introduces "religious intuition" with a view to discovering the depths of the spirit. Religious experience and its affirmations give the clue to the nature of the spirit in man.

According to Radhakrishnan matter, life, mind (consciousness), intellect and the ego (self-consciousness) form a hierarchy of the manifestations of the spirit in the world. Each higher level includes the lower and is yet something more. Life that emerges from inorganic matter, for example, is not wholly reducible to the latter. It has something new and unique. Every higher emergent quality is a fuller manifestation of the spirit.

The emergence of a new quality indicates a sudden jump and a surprising deviation from the lower. The different levels are not, therefore, strictly continuous, though they can be arranged in an ascending series. But in all of them we can discover the presence of the essential characters of the spirit, creativity, change, order and progress. Thus we see that Radhakrishnan advocates a form of idealism. Its basis can be traced in the Upanishads where matter (*anna*), life (*prana*), perceptual consciousness (*manas*), self-conscious intellect (*Vijnana*) and bliss (*ananda*) are shown to be the truer and truer expressions of the spirit. But in Radhakrishnan's philosophy we find blended the modern idea of emergent evolution. The result is an absolute idealism of a dynamic type.

To consider this *Absolute Idealism* of Radhakrishnan we should consider his conceptions of the human self, God and the Absolute. According to Radhakrishnan the human self is neither simple nor a substance. It is the latest and the highest product of the creative process of emergent evolution. As such, it is much more integrated and organised than matter, life and the animal mind. While integration is automatic or instinctive in the sub-human world, it is at least partly conscious and voluntary in man. Through intelligence man can knit together the different apsects and moments of his life. He can contemplate some ideals and organise all the activities of his life for the attainment of values. The more he unifies his life in pursuit of ideals, the more organised, integrated and perfect does his self become. The maximum degree of unity can be attained only when the entire life is strung to one purpose, when man's physical, vital, psychological and logical energies are all controlled, unified and guided by one common conscious purpose.

But this purpose can be no other than the conscious realisation of man's unity with the spirit that underlies his entire existence as well as that of everything else. The spirit in man is always shining in him, even in the depths of his degradation, because it is that which transcends and yet enlightens the empirical self. It is also the universal self, the core of all reality. In realising his unity with the universal self or his own spiritual existence man becomes one with the universe. In consequence the internal conflict among the different aspects of his life—passions, desires, feelings and thoughts—disappears; and so does the conflict between his self and the environment, between his self and other selves. Only at this stage can we speak of the human self as being completely organised and being a self in the truest sense.

In the view of Radhakrishnan God is "the Absolute Cast through the moulds of logic." God is the personified aspect of the Absolute, the mind in which everything lives, moves and has its being. God is the Absolute considered as the ground of this world. "Even as the world is a definite manifestation of one specific possibility of the Absolute, God with whom the worshipper stands in personal relation is the very Absolute in the world context and is not a mere appearance of the Absolute." As a creator, God is personal, while the Absolute is impersonal. But the "life of a personal being is not possible except in relation to an environment. If God has no environment on which He acts, He cannot be personal."

Radhakrishnan thinks that God can be a creative personality acting on an environment, only if the environment is not identical with God, but dependent upon Him. In other words, God can be conceived as a creator because of His attempting to actualise an unrealised possibility in the Absolute. Things that are experienced by us as being in this world, or as possessed of being are that part of the possibility of the Absolute which has already been actualised. The unactualised part of the possibility can, therefore, be called non-being. God is trying to turn this non-being into being, to actualise the unrealised potential. The non-being is, therefore, the environment with which God is faced, and to which the creative effort of God is directed. When the non-being is reduced fully to being, the dualism between God and the given environment ceases, the distinction between the creator and the created vanishes. "God lapses into the Absolute". The world fully returns to God, or what is the same thing, God is fully manifested in the world. God is the final satisfaction, and in Him man finds self-completion. Man wants to grow in the image of God, perfect in power and wisdom.

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For Radhakrishnan the Absolute is the total spiritual reality, manifested and unmanifested, actual and potential, realised and unrealised. The world is the manifestation of the Absolute in time. It is not an exhaustive, nor the only possible manifestation. The cosmic process is the attempt to realise only a few of the infinite possibilities contained in the Absolute. But, though the world, an actual manifestation of the Absolute, is not necessary for the Absolute. Creation is a free act. As to why this world came into existence "we have to answer that it is an expression of the freedom of the Absolute. It is not necessary for the Absolute to express any of its possibilities. If this possibility is expressed, it is a free act of the Absolute."

In Radhakrishnan's view so far as the Absolute is concerned, the creation of the world makes no difference to it. It cannot add anything to, or take away anything from, the Absolute. We cannot say that the world follows from the nature of the Absolute even as the conclusion of its syllogism follows from premises, as Spinoza would have us believe. The Absolute is the ground of the world only in the sense that a possibility of the Absolute is the logical *pirus* of the world. The world would not be but for this possibility in the Absolute. According to Radhakrishnan the Absolute is the pre-cosmic nature of God, and God is the Absolute from the cosmic point of view.

To sum up: The Self, God and the Absolute are all names of the one universal spirit in its different aspects. The self is the manifestation of the spirit in the human centre, through the body and mind of man. God is the spirit conceived as the reality manifested in the world as a whole. The Absolute is the spirit conceived as the infinite possibility of which the present world is only one actual manifestation. Attempts have been made from Plato, Aristole and the Hebrews down to the Christians to reconcile the doctrines of God and the Absolute. But the attempt at reconcilitation has not yet borne fruit.

Radhakrishnan is also aware of this fundamental problem and in his *Idealistic View of Life* where we find a successful attempt to reconcile the doctrine of the changeless perfection of the Absolute with the conviction that God is also responsible for this changing world. The way in which the relationship between the Absolute and God is explained by Radhakrishnan is not the same as done either by Sanikara or Bradley, though it has apparent similarities to their views. This may be taken as Radhakrishnan's most distinctive and original contribution to metaphysics.

According to Radhakrishnan knowledge of the real is produced in three ways: through sense experience, discursive reasoning, and intuitive apprehension. Sense-experience helps us to know the outer characters of the external world. Logical understanding is obtained by the processes of analysis and synthesis. But neither of the two gives us an immediate insight into reality. Hence the necessity of intuition is intensely felt. Intition is derived from the word *intuitus*, which, like the word *pratyksa*, means the sense of sight. It covers all the cognitive processes characterised by directness and immediacy, i.e., all non-inferential modes of cognition. What we know by inference or heresay is not intuitive knowledge. Thus intuition is of two kinds, perceptual experience and integral insight. But Radhakrishnan uses intuition in the sense of integral knowledge, *sammayak-jnana*.

Radhakrishnan is of the view that intuition, though it includes the testimony of the will and feeling, is never fully attained without strenuous intellectual effort. It cannot dispense with the discipline of reason and the methods of proof. Intellect is necessary to put intuition to proof. Spiritual insight is not anti-rational. It may go beyond reason, but it is not against reason. It is the deepest rationality of which we are capable. In it we think more profoundly, feel more deeply and see more truly. Intellect and intuition are complementary to each other. Radhakrishnan has always emphasised the need for spiritual illumination. He says: "Unless we are illumined from the heights above, earth-born intellect cannot take us far." Thought expires in experience. Intellectual fruition is in intuition; *vidya* ends in *anubhava*. The intuitional experience (aparoksanubhuti) is the summit of the whole evolution. It is the crowning phase of human life. It is the completion and the consecration of the whole struggle. Here terminates the philosopher's quest for reality and his thought can rest.

It is the primary aim of philosophy to unify completely, to bring into clear coherence, all departments of rational thought, and this aim cannot be realised by any philosophy that leaves out of its view the important body of judgements and reasonings which form the subject-matter of ethics. And Professor Radhakrishnan is most eloquent in his writings on ethics. Ethics is concerned with conduct as expressive of character, and that conduct is not only three-fourths of life, as Mathew Arnold would have it, but the whole of life. Ethics is the heart of philosophy.

The ethical doctrine and the principles of ethical practice which Radhakrishnan upholds are essentially in conformity with the tradition of Hinduism. For Radhakrishnan the ethical life must be rooted in ultimate reality if it is to have any significance and be more than an illusion, a product of imagination, a mere convention, or an artificial way of life void of all justification and obligation. It is only reality itself which can provide a ground for ethics by imparting meaning to the obligations of the moral agent to do the right. Radhakrishnan insists in all his writings upon the indispensable relationship of metaphysics, the science of reality (brahmavidya) and ethics, the art of union with reality (yogasastra). He observes: "Any ethical theory must be grounded in metaphysics, in a philosophical conception of the relation between human conduct and ultimate reality. As we think ultimate reality to be, so we behave. Vision and action go together." In the view of Radhakrishnan the ideal of ethics is self-realisation. For him morality is a stepping stone and not a stopping-place. Ethical perfection is the first step towards divine knowledge.

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With Radhakrishnan, as with all great Indian thinkers, the fundamental problem is that of salvation (*moksa*), and the philosophical systems which the great thinkers construct are to provide knowledge of the truth about reality, because it is only in terms of knowledge of this truth that man can live correctly and attain his ultimate goal and destiny. Radhakrishnan again and again emphasises that man must live in accordance with the nature of reality and himself, in order that his moral obligations may be fulfilled and he may attain salvation and infinite bliss. But salvation is the result of metaphysical insight, and not of moral perfection. Therefore, ethics must end in religion, *karma* is *jnana*. This, in brief, is Radhakrishnan's view on ethics.

According to Radhakrishnan religion (dharma) is of complex significance. It stands for all those ideals and purposes, influences and institutions that shape the character of man both as an individual and as a member of society. It is essentially, the law of right living, the observance of which secures the double object of happiness on earth and salvation, *abhudaya* and *nishreyasa*. For Radhakrishnan the whole life is a sacrament, every activity is *dharma* as Gandhiji also called it.

In the view of Radhakrishnan religion is an autonomous form of experience which knows no bounds, and cannot even be confined to morality, though it cannot help expressing itself in a high ethical code. Religion is essentially a concern of inner life. Its end is to secure spiritual certainty which lifts life above meaningless existence and keeps it free of despair. The sense of the infinite is the basis of religion. This sense is not satisfied with what the eyes see or the ears hear. When cultivated, it introduces us into a higher world than the world of our day to day life. Radhakrishnan thinks that a man may be highly moral, practise virtue scrupulously, but if faith in the spiritual significance of the universe is not in him, he is not a religious man. According to him, the aim of religion is to attain knowledge or rather vision of God, *brahma-jnana*.

Radhakrishnan feels convinced that the need of the present age can be fully satisfied only by a "religion of the spirit" which will give purpose to life, which will not tolerate any evasion or ambiguity, which will reconcile the ideal and the real, which will speak to the profound realities of our nature and satisfy the whole of our being, our critical intelligence and our active desire. "Religion should be the relentless enemy of oppression and injustice. Religion is revolutionary or it is nothing." Religion, as conceived by Radhakrishnan is not, therefore, "quiescent but combative." Born in dissatisfaction it is a revolt against the present age of in-humanity. It is an active preparation for a new life" through the transformation of the feelings and passions of men, through a discipline of our whole being. Religion for Radhakrishnan is not a mere personal affair but all-selfness, *sarvatmabhava*. "Religion may start with the individual but it must end in a fellowship." Religion is whole humanity.

Religion of the type Radhakrishnan has suggested in his various works accepts the challenge of science, assimilates its lessons and preserves for humanity what is vital in religious endeavour. It demands the renewal of man's spirit or the growth of man from an intellectual to an illumined consciousness, to adopt the language of evolutionary philosophy. Religion is a transforming experience, the result of inward change and discipline. It means an illumined mind, a changed heart and a transformed will. It has tremendous social effects. It is both spiritual and humanistic, solitary and social. Its adherents symbolise conviction in a world of waverers, piety in an age of easy morals, human brotherhood in an anarchical world of nations and races and heroic courage in times of persecution.

The problems of philosophy—conclusion of God, soul and immortality—are fundamentally the same, though they are stated by each age in its own way. Philosophy is the self-expression of the growing spirit of mankind, and the philosophers are its voice. Great thinkers appear in all great ages, and are as much the creatures as the creators of their era. Their genius lies in the power to seize the opportunity of the hour and give voice to the inarticulate yearnings that have for long been struggling in the hearts of men for expression.

A creative thinker of the first rank, Radhakrishnan entering into the philosophical inheritance of his age, has reinterpreted it with special reference to its needs. His originality lies not in inventing any new system but boldly reinterpreting the much abused eternal verities of life. But the originality and depth of thought required to perform this task are in no way inferior to those displayed in founding a new system. Professor J. H. Muirhead in reviewing his *Idealistic View of Life*, in which we find his original contribution to the religious thought of his time, wrote: "If originality in philosophy as in poetry consists, not in the novelty of the tale, nor even in the distribution of light and shade in the telling of it, but in the depth with which its significance is grasped and made to dominate over the details, his book certainly does not fail in this quality." And Professor Muirhead's statement may be generalised and made applicable to all that Professor Radhakrishnan has written.

Commentators like Samkara and Ramanuja restate the old doctrine and their restatement is just as valuable as a spiritual discovery. We cannot distinguish the old from the new, for in the living the old is new and the new is old. The greatest thinkers of India simply profess to be interpreters, but in their attempts to expound the texts, they improve on them. It is a waste of time to try to be original by despising the past. No philosophy could discard its past. Whitehead remarks that the whole course of European philosophy is a series of footnotes to Plato. We can, therefore, say that Radhakrishnan is not only a classical commentator who has interpreted Indian philosophy at its inspired best but also an original thinker of the higest order.

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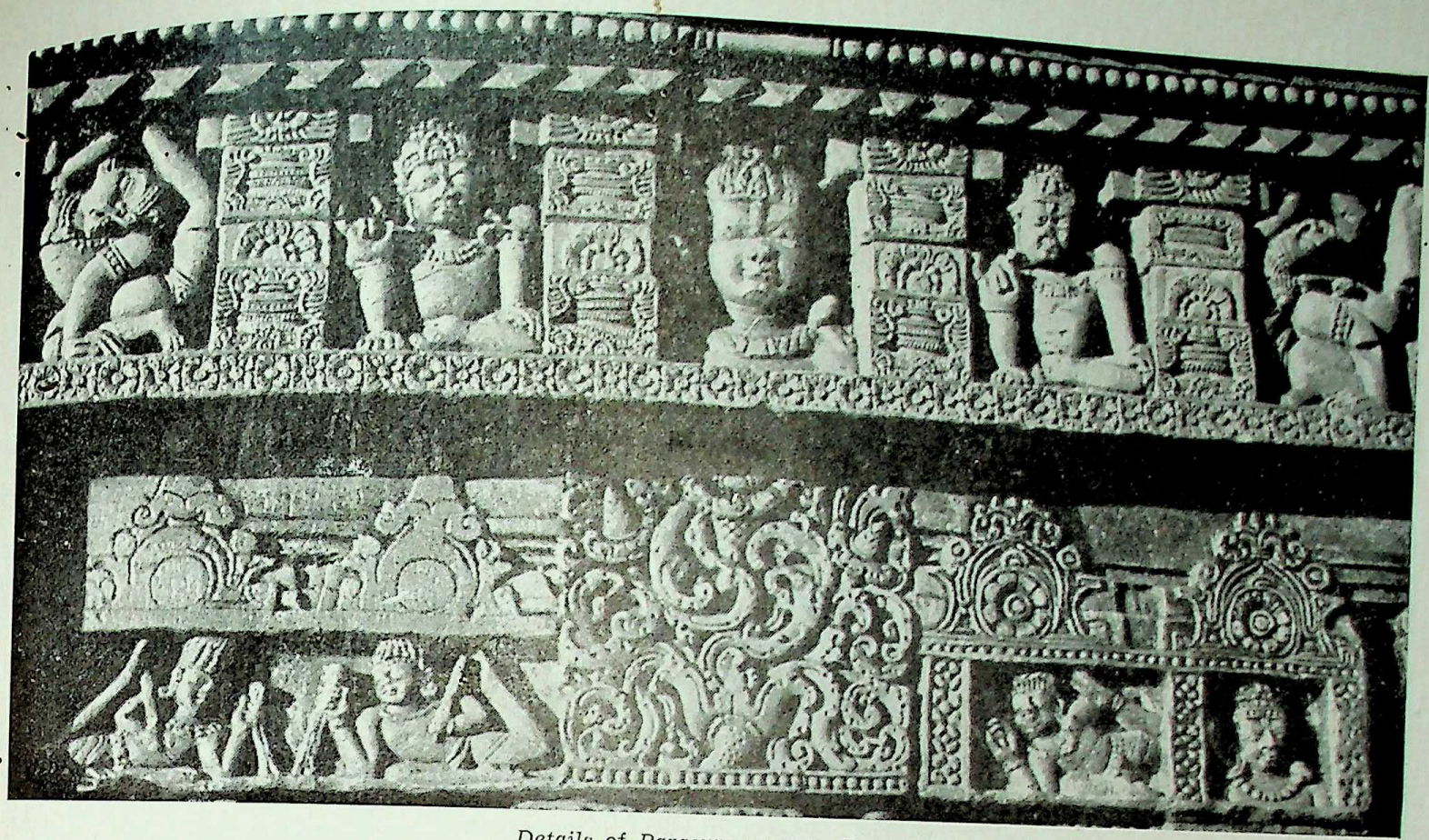

Details of Parasurameswara Temple

Bhubaneswar—The Temple City of Orissa

Gauri Sankar Bhattacharyya

FROM time immemorial, the province of Kalinga or modern Orissa has been a place of immense interest and importance. Even before the dawn of the Christian era, it enjoyed a position of great consequence and significance. A whole life can be dedicated to the study of its arts and crafts, its archaeology and architecture, its culture and civilisation, its antiquity and ethnology. Voluminous books can be written about the various places of Orissa.

I shall, however, confine myself to describing briefly the city of Bhubaneswar which I visited recently.

This temple city has always attracted pious pilgrims and tourists. In ancient religious texts, Bhubaneswar has been named variously as Ekamrakanan or Ekamrakshetra, Hemachal, Swarndrikshetra, etc. In the opinion of the famous Indologist, Dr. Rajendra Lall Mittra, it should be more properly called "Tri Bhubaneswar", which might have been shortened to "Bhubaneswar" for the sake of convenience.

It is a place where we fail to notice the least trace of foreign influence. It still proudly shines in its purest Indo-Aryan style. Except Orissa, no province of North-Eastern India can claim to have preserved such pristine purity of its native heritage.

Bhubaneswar is a Saiva-Kshetra or a place associated with Lord Siva. The Saivaites consider it their sacred and bounden duty to pay a visit to it once in their life-time. But also to non-Saivaites, Bhubaneswar is immensely dear; although only a small number of people visit it, as it neither has the charming and fascinating sea-front, as at Puri, nor does it boast of good hotels and other amenities. But a city adorned with innumerable glorious and unrivalled masterpieces of architectural monuments, Bhubaneswar has deep roots in the hearts of all true lovers of ancient history and culture.

It is said that Bhubaneswar has a recorded history of over 1,500 years. Nor is this all. Recent excavations in the modern village of Sisupalgarh, two miles from Bhubaneswar, throw much light on many unknown and blank pages of Orissan history. This discovery is of immense significance, as it shows that it was probably the seat of the Jaina Emperor Kharbela

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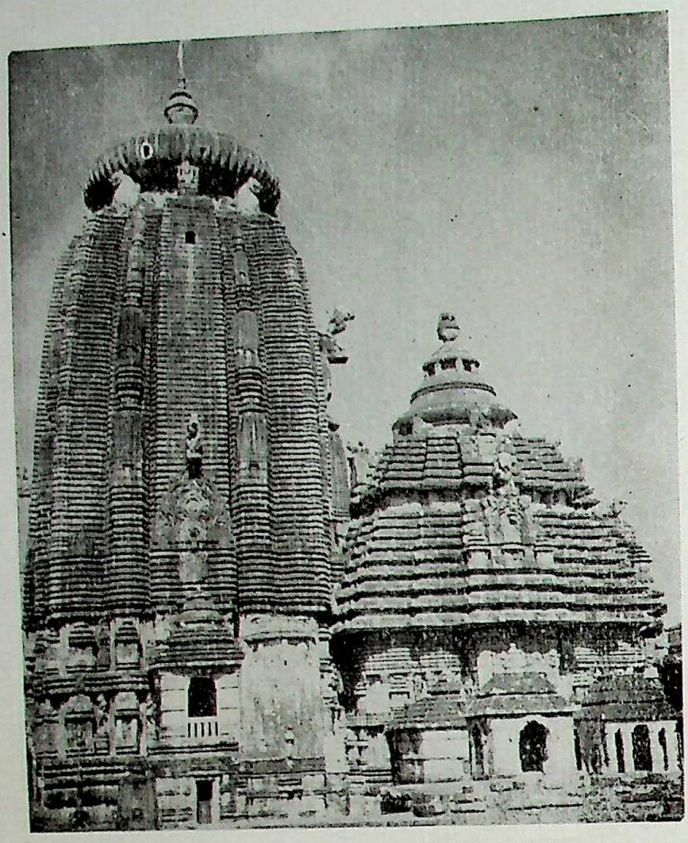


The "Great Temple" built in 617-57 A.D.

who ruled in the second century B.C. The excavations have unearthed a well-laid, planned city, many valuable ancient relics, potteries, terracottas and other specimens of art and architecture. They take us back to the pre-Buddhist era.

The city contains numerous temples. Legends have it that once there were about seven thousand of them but the course of time has reduced their number considerably. At present, only two hundred or so remain. Among the well-preserved temples, there are many so old and decayed that at any moment they may become a heap of ruins. But they still retain their general aspect and its many carvings are bound to impress the visitor. Again, it is a historical truth that the temples of Bhubaneswar are much older than those at Konarak or Puri.

These temples should not be considered to have been built under any one group of people or followed any one fashion. Varying in date, they do not follow a uniform pattern with regard to style or construction.

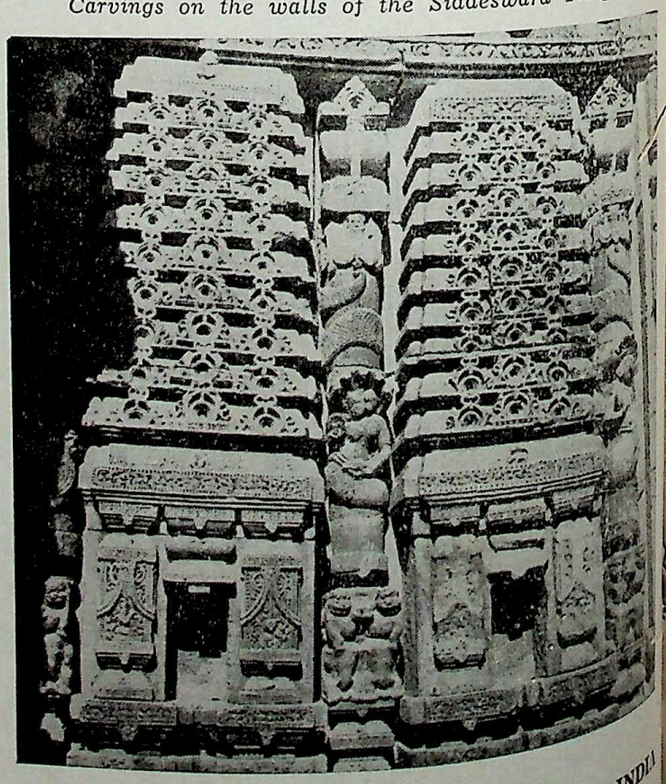
In mediaeval Orissa, a temple had usually four parts or chambers, viz., Vimana, Jagomohana, Natamandira and Bhogmandapa. Each and every one of these four chambers is decorated with five specimens of architectural design. But all the temples of Bhubaneswar were not divided into four parts. There are some shrines which do not possess Jagomohana. Some temples are built only in two parts. The well-known and famous among the Bhubaneswar temples are the Lingaraja, Ananta-Vasudeva, Bhrameswar, Mukteswar, Parasurameswar, Bhaskareswar, Uttareswar, Kedareswar, Raja-Rani, Sari-Deul, etc.

Let me describe a few of them. The temple of Lingaraja is unique and is the largest of all. Lord Siva is often represented by a lingam, the symbol of infinite energy and fertility, of eternal truth and power. Lingaraja as the very name implies is one of the many names of Siva—the Lord of the Universe. The magnificent Lingaraja temple with its sacred and immortal deity is dear to every Hindu. It is Bhubaneswar's main shrine, which is visited by thousands of devout Hindus every year.

Some scholars date it to the 10th Century A.D., while Dr. Mono Mohan Ganguly places it at the beginning of the 9th century A.D. It stands in a spacious and paved courtyard (520′×465′) surrounded on all sides by a magnificent thick boundary wall of laterite (about 7′-6″). Perhaps it was built to protect the great temple from foreign invasion. The eastern gate which is the main entrance is called Sinhadwara (Lion Gate). On either side of the gate, two gigantic figures of lions are found similar to those at the Jagannath Temple of Puri. As one enters through this gate, many large and small temples are to be found within the compound, some of which are in a bad condition, while others are fairly well preserved. Among these shrines that are clustered round the main temple, the temple of Parvati strikes every visitor. It is much smaller than the main shrine but it has a charming simplicity, grace and beauty of outline. It stands at the north-west corner.

Of the others, the temple of Ananta Vasudeva stands on the road leading to the temple of Lingaraja. This temple, as its name implies, is a Vaishnava temple dedicated to Ananta and Vasudeva or Krishna and Balaram. It is the only Vaishnava temple extant at Bhubaneswar. In confirmity with the rule it consists of four parts and faces the famous sacred Vindusarovara to the west. The devotees first take a dip

Carvings on the walls of the Siddeswara Temple



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in the holy tank and, after offering their pujas at the temple, they go in joyous expectation to have a glimpse of the great Lingaraja. Lingaraja, though regarded as Siva, is looked upon as one of the many incarnations of Lord Vishnu. According to orthodox belief, Siva in the Lingaraja temple withholds the blessings unless offerings are first made to the deity at the Ananta Vasudeva temple. With the passage of time some of its engravings have been obliterated, but they still remain attractive in the Vimana and the other chambers.

The Mukteswar temple, which is situated half a mile to the north-east of the Lingaraja temple, is a characteristic one. The masterly skill and uncommon forbearance with which the famous Orissa sculptors and craftsmen built it deserve utmost praise. Its charm and beauty can better be seen than described in words. The whole temple seems to be throbbing with an undying spirit. It consists of two parts—the Vimana and the Jagomohana, and it is said that the construction of its Jagomohana reached the highest standard. Human figures symbolised in the decorative motifs are prominent in this temple. Above all, a graceful and lovely *torana* or arch facing the Jagomohana enhances its beauty. It is a temple surcharged with the spirit of genuine sincerity and spotless purity—artificiality is foreign to it. Many scholars speak highly and eloquently of this temple, defining it as "the gem of Orissa Architecture", "the epitome of Orissan Architecture showing all that is best in it", "a dream in sandstone" and so on.

Though the Raja-Rani temple has no lingam or idol in it, it is one which is unrivalled for its excellant artistic and architectural carvings. The temple has a special attraction that enchants all true lovers of art. It is a challenge to the world of art. It seems to breathe chastity and nobility. Like the Mukteswar temple, it is divided only into two parts—the Vimana and the Jagomohana. Some scholars call it exotic because of the presence of miniature sikharas as projections in the Vimana.

The temple of Parasurameswar is regarded as the oldest temple of Bhubaneswar. It is still in a good state of preservation and has defied the ravages of time. For iconographers it is of special interest.

There are several large and small tanks or sarovars in Bhubaneswar.

The Vindusarovara facing the famous Ananta Vasudeva temple is the biggest and most famous of all the tanks. It is said to measure 1,300 feet by 700 feet and is 16 feet deep. A small and charming white temple stands on an island in the centre. On the sacred occasion of Chandan-Yatra or Snana-Yatra, an image of Vishnu is taken there with pomp and ceremony and the whole island takes on a festive mood. The Narendra Sarovara or Chandan Puskarini of Puri, too, has a similar small white temple on an island. According to ancient traditions, the tank is said to have been filled with drops of water from all the sacred tanks and rivers of the worlds. Hence its name, Vindusarovara.

Half a mile to the north-east of the Lingaraja temple and on the eastern side of Gauri's temple, there is a tank called Gauri Kunda. It measures 70 feet by 28 feet. Three of its sides are bounded by stones and the fourth to the south has a flight of stone steps measuring 20 feet by 10 feet. According to Siva Puranam, this Kunda or tank was dug by Devi Gauri herself.

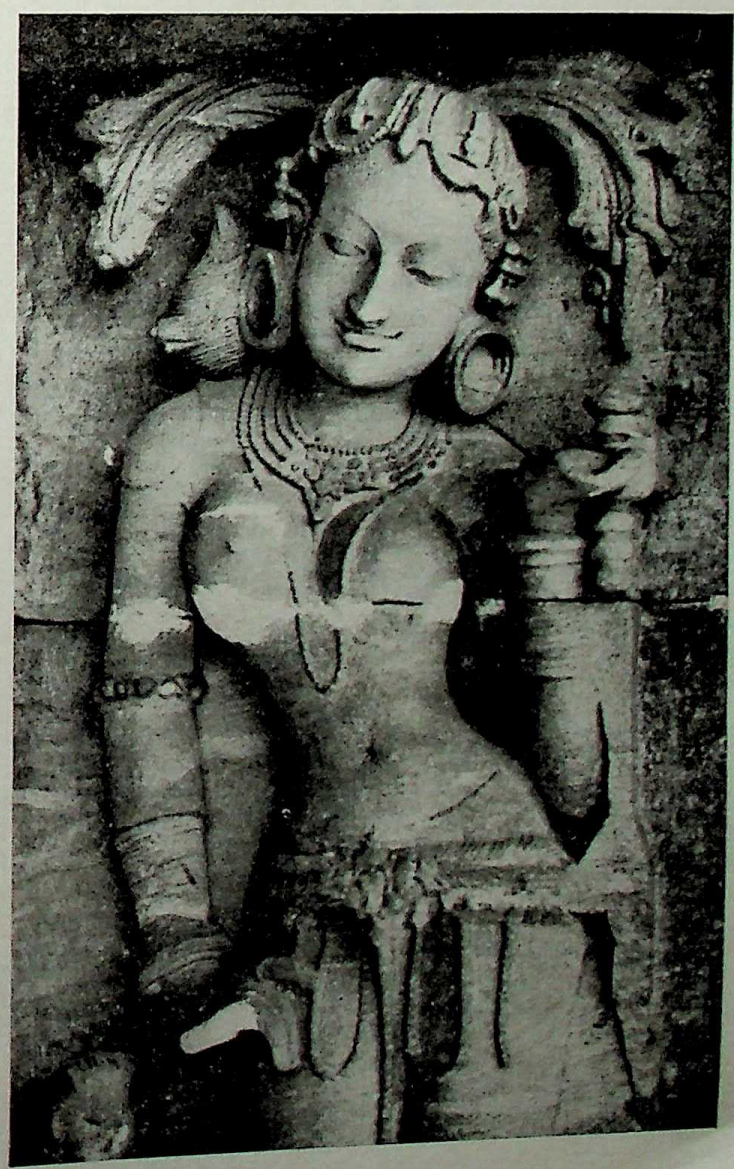
Other tanks worth mentioning are the Sahasralinga or Devipadahara and the Papanasini tank.

A visit to Bhubaneswar remains incomplete if one does not visit the age-old cave monastries of Khandagiri and Udaygiri, a few miles away from Bhubaneswar, free from the noise and bustle, and the dust and din of a modern city.

It is well known that the Buddha and the Jaina influence were once predominant in Orissa, but they gradually declined there. During the Buddhist and the Jain period, these numerous caves were carved out of the rock which gave shelter to the Buddha and Jaina Sramanas or monks. One should not think, however, that all caves are of spacious dimensions. There are, indeed, many tiny, low-ceilinged caves and the ascetics had to crawl into their cells.

The caves of the Udaygiri hill are more numerous

Sculptures from Lingaraja Temple



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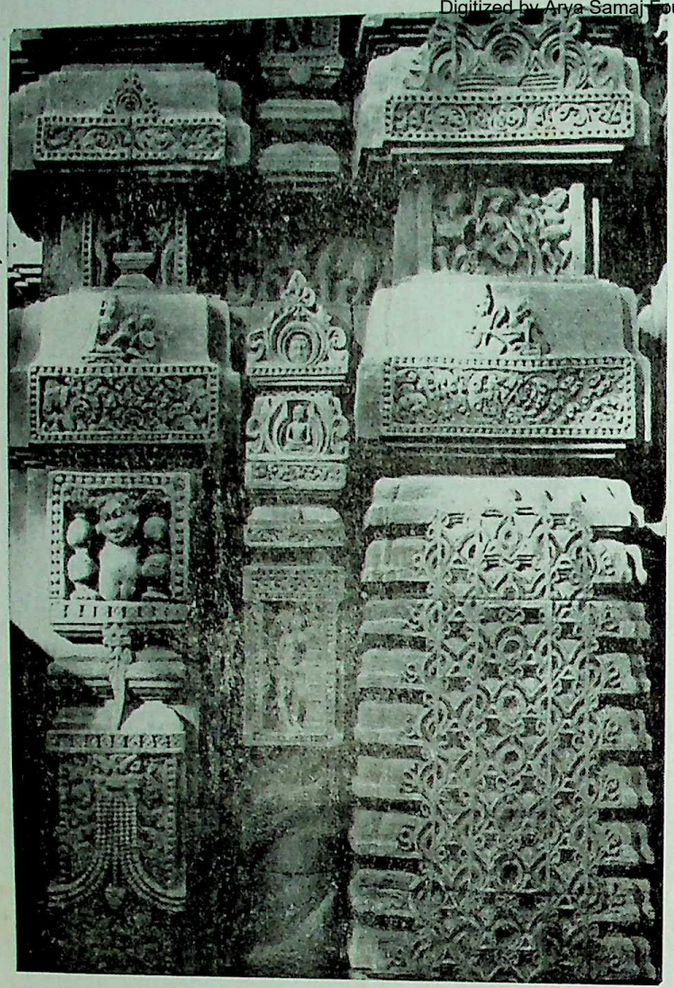

Details of Mukteswara Temple

than of the Khandagiri hill. A flight of steps leads one easily to both these hills.

Among the Udaygiri caves, the Hathi Gumpa or the elephant cave is the most important as it still bears an inscription which throws much light on the achievement of the Jaina Emperor Kharbela. The Rani Gumpa in the same hill is also very remarkable and beautiful; it has two storeys and contains a large number of cells. The tiger-cave is interesting, as the eye, nose and upper jaw of a tiger have been represented on it.

The Khandagiri hill is crowned with a fascinating white temple, ever luminous in the rays of the sun. This temple was built by the Marhattas at a much later date and possesses the images of Jaina Tirthankaras. The Ananta Gumpa, the Navamuni, etc., are some of the famous and noteworthy caves of the Khandagiri hill.

Bhubaneswar is surrounded by many hills which are important from an epigraphical point of view. Dhauli Parbat has caught the eye of many inquisitive scholars, as it contains the world-famous rock edicts of the great emperor Asoka. After Chandasoka had become famous as Dharmasoka, Piyadasi Asoka, he began to preach the gospel of Lord Buddha throughout the length and breadth of India as well as abroad. On the face of a monument or a hill, he engraved the story and teachings of the Tathagata. Once the Buddhists regarded this place with high esteem as Buddha's tooth-relics were said to have been preserved here for a long time.

Standing on the Khandagiri, Udaygiri and Dhauli hills, our minds range over the past achievements of our ancestors. Many centuries have passed but these historical remains bear undying testimony to a great past.

Bhubaneswar has become the new capital of Orissa. Previously Cuttack enjoyed this position, but the Government of Orissa has taken a wise step in giving a new shape to the old and glorious Bhubaneswar which is developing into a modern, well-planned city. Indeed, what the artists and craftsmen of Orissa did in the past, the architects and engineers are repeating today by creating a memorable landmark in the new capital of Orissa—Bhubaneswar.

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Life in Sikkim

Leela Dayal

Storm over the lake near Kupup, North - Western Sikkim (A water colour by Kanwal Krishna)

THE beautiful State of Sikkim lies in the Eastern Himalayas. It has on its borders the Darjeeling district of West Bengal, Nepal, Tibet and Bhutan. Its frontiers formerly extended from the Terai at the foot of the hills to well inside Tibet. Even now it includes mountains and valleys ranging in height from under 1,000 ft. above sea-level to over 28,000 ft.

The traveller feels he is entering another world when, on his way to Sikkim, he reaches Bagdogra airport or the Siliguri railway station. From here he may catch a glimpse of Mount Kanchanjunga, and see Lepchas, Sikkimese and Nepalis from the mountain State in their picturesque costumes.

The Lepchas, a Mongoloid tribe, were the original inhabitants of this territory. They were followed by immigrants from Tibet, whose descendants are known as Sikkimese Bhutias or plain "Sikkimese." Then came large numbers of Nepalese settlers who, being hard-working and shrewd, soon established themselves as farmers and traders.

The Sikkimese and the Lepchas are Buddhists, while most of the Nepalese are Hindus; each group follows its own customs and has its own festivals. Buddhism is the State religion and the people are very religious. Everywhere we find monasteries, some ancient and beautiful like those of Tibet, and chortens (stupas or chaityas); prayer flags flutter from trees or bamboo poles above the houses or in the gardens; prayer wheels, many of them rotated by the tumbling waters of mountain streams, are to be found on the hillsides.

Once a week, on the market day, people gather in every village in their gay and colourful dresses to buy and sell their vegetables, fruits, eggs and other farm produce, as well as miscellaneous articles of domestic use. After the day's shopping, they all enjoy a drink of *rakshi* or of *chang*, a kind of cyder made from millet and served in bamboo vessels, and return home quite merry.

The Lepchas have their own language and their dress is a bright stripped cloth of hand-spun weave which they drape round their bodies over flannel or calico shirt and shorts; on their head is a tight-fitting cap with a knot of semi-precious stones on the crown, or a straw hat with peacock feathers. Some Lepchas wear the Tibetan *chuba* or *bokhu* (a loose gown fastened at the waist with a sash) and a turquoise ear-ring or button in the right ear. The Lepcha women wear Tibetan dress, like the Sikkimese.

The Sikkimese Bhutias, among whom are most of the Kazis or noblemen, are of Tibetan origin and follow all Tibetan customs, except that they cremate their dead instead of dissecting their bodies and consinging them to hungry dogs and vultures, or throwing them in the river, as is the practice in Tibet. Their jewellery is very heavy, and is studded with semi-precious stones such as corals, turquoise and agate. Some Kazis are highly cultured and have a profound knowledge of religion and art.

The Nepalese are a thriving community and their women wear a kind of sari with a long-sleeved blouse, huge round gold ear-rings, and necklaces. The men wear tight-fitting trousers and black coats. The

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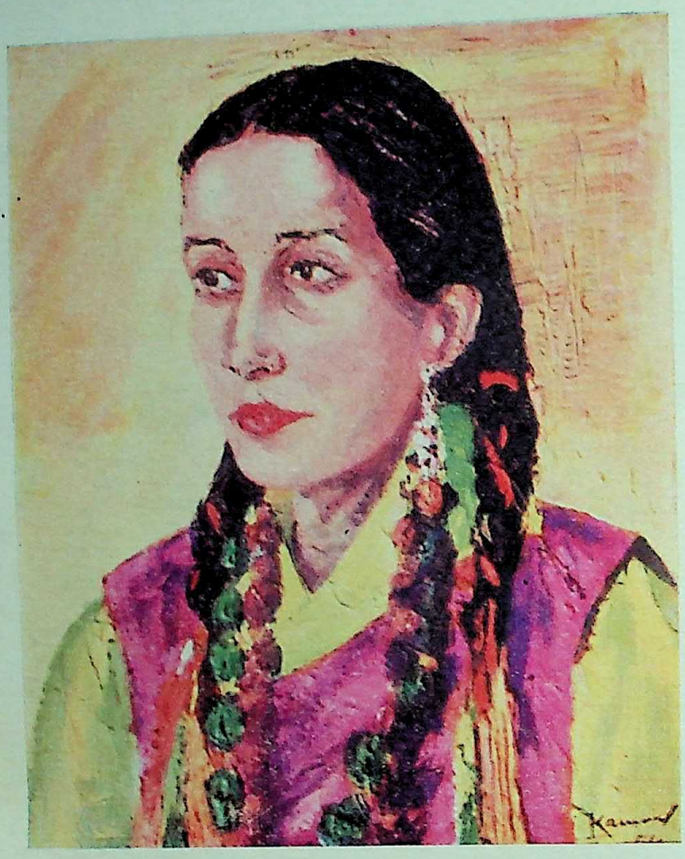


A lady in Sikkimese dress (Painting by K. Krishna)

Nepalese live mostly in villages below Gangtok (the capital) and in Western Sikkim; but the Bhutias and the Lepchas are to be found all over the State.

The Nepali language and script are very similar to Hindi, while Sikkimese is an archaic form of Tibetan. The common tongue, however, is Nepali and all communities speak it fluently.

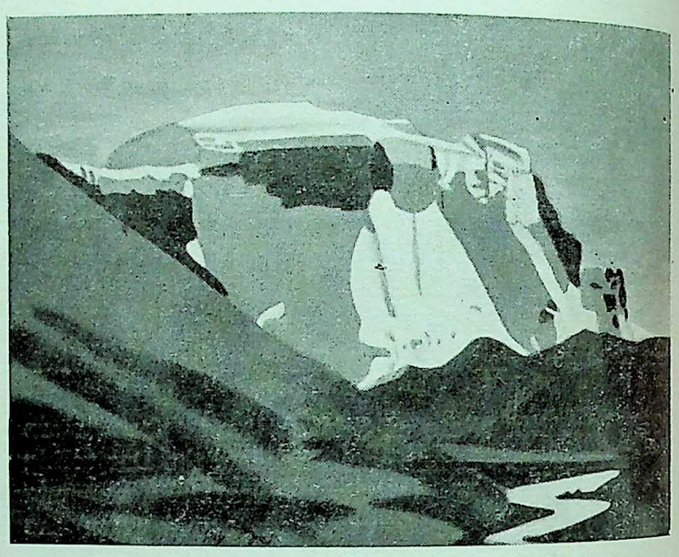
The types in Sikkim vary and are easily distinguishable, but all have slit eyes, mongoloid features, rosy complexions, regular, white teeth, and a luxuriant growth of hair. All are cheerful and fond of a little drink, dancing and games of chance. Their artistic talents find scope in woodwork, painting and weaving; beautiful carpets of Tibetan design are manufactured in a factory working under the Ruler's patronage.

Travelling up through Sikkim one sees neatly terraced rice-fields ranging the slopes of the hills, and in the rains very thick crops of maize. Sikkim rice is excellent and the yield is very good. But in these steep and narrow valleys rice does not grow above 6,000 feet, the highest point at which it flourishes being Chungthang in Northern Sikkim. Legend has it that on one of his missionary journeys Guru Padma Sambhava dropped a few grains here while having a meal and ever since rice has grown at Chungthang.

The Tibetan name for Sikkim is Drenjong, the Country of Rice, and rice is the staple food of the people, excepting the Bhutias of Northern Sikkim whose diet is *tsampa* or finely-ground barely meal, mixed sometimes with red chillies and salted butter-tea as in Tibet. These people are shepherds and herdsmen; they also grow fine potatoes.

The Nepalis eat mostly rice and curry which is also much relished by the Sikkimese though their curries are not so highly spiced. The Sikkimese eat a lot of pork, often in the form of vast chops, as well as mutton and, occasionally, beef. Their vegetables include bamboo shoots as well as some flowers and berries, and stinging nettles with the "sting" removed, besides the usual potatoes and greens. The Lepchas are expert naturalists and know all the edible plants in their forests; it is said that they also eat monkey-flesh, besides the more usual kinds of meat.

It is not generally known that one of Sikkim's principal exports is the large black cardamom or *elaichi* which grows in great profusion in the moist and relatively warm valleys. There are great opportunities of fruit-growing also.



Kanchanjunga glacier (Painting by H. H. the Maharaja of Sikkim)

In the Lachen and Lachung valleys of Northern Sikkim, where the cheeks of the people are as rosy as apples, there are extensive apple orchards, whose produce is sold in Gangtok. Unfortunately, owing to bad roads and lack of adequate transport, a large quantity of these delicious and enormous apples is wasted. There was heavy damage to the Lachung orchards in a devastating flood in 1950.

If Northern Sikkim is the home of apples, the lower regions of the State have vast orange groves, the season lasting from November till March; and in the summer pineapples are plentiful. There is much trade in both these fruits, which are exported mainly to Calcutta. On the lower slopes all the gardens are laden with the tiny, sweet and juicy Sikkim oranges and the roadsides are a blaze of yellow from the peel discarded by porters who help themselves freely from the long, conical baskets in which they carry the fruit to market. At the height of the season oranges are sold at four for an anna. Many householders and some merchants make delicious orange squash which is perhaps the best I have ever tasted and deserves to have a market throughout India and also abroad.

The people are very simple and lead quiet lives. Their day begins at dawn when they go out to tend

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their animals and fields, and they work all day, mostly out of doors. Like all our village people they go to bed early—there is electric light only in Gangtok. There are two high schools—one for boys and one for girls—in Gangtok, and middle and primary schools elsewhere.

But too many of the children have to work for their living with their elders and remain illiterate. The Nepalis seem to show exceptional aptitude for study and the child at the head of the class is generally a Nepali. Most of the older Lepcha servants are illiterate and it was only with difficulty that I persuaded two of our orderlies to send their children to school. Later they thanked me for it.

Although there is naturally scope for improvement in medical facilities, the people generally are

Chorten and prayer flags, Western Sikkim (Painting by K. Krishna)

hardy and I even came across octogenarians working happily in their fields. The women too, are strong and work as labourers and porters. The toughest people are to be found in Northern Sikkim, where the porters heave their loads on to their backs and liberally run with them, even at an altitude of over 13,000 ft.

There is no untouchability in Sikkim, and it was usual to see the sweepers eating with the other servants and moving freely about the house. There has been some missionary activity in Sikkim but it is said that some simple people in the remoter parts professed to change their religion only in response to some immediate material temptation, and soon reverted to Buddhism. The missions have, however, done valuable work in the medical and educational fields, and a noble missionary doctor who lost his life in the flood disaster in Northern Sikkim in 1950, when a mission house was washed away, will always be remembered gratefully.

The rainfall is very heavy in Sikkim. The monsoon begins at the end of May and lasts till September. Even in winter, when there is snow on the high passes, it rains lower down. As in all damp climates flowers are the greatest joy of the people. All the year round there are exquisite flowers growing wild in all parts of the State. There are nearly five hundred varieties of orchids, which are known to collectors all over the world.

The rain forests at the lower altitudes are full of tree ferns and tropical evergeens and creepers. Higher up one finds the very rare giant lily in an odd corner of the forest beside the Tibet road. It puts up a slender stem about six feet high, on which blooms only a single flower. Northern Sikkim and the region of the Nathu La and Jelep La passes on the Tibet border are famous for rhododendrons of all shades, shapes and sizes. One wades through miles of rhododendron forest and the mountain slopes are one mass of red or creamy yellow, white or pink or mauve.

Other flowers which grow in abundance are all the alpine varieties, primulas and gentians which carpet the higher meadows, anemones, saxifrage, and, higher up, the yellow poppy and the rare and gentle mecanopsis. The plants and the flowers are at their best in the late spring and early summer.

Gardening here is sheer joy and in all parts of Sikkim every poor villager's hut has a sweet little garden full of blossoming trees and wild flowers. On festive occasions the people use them to make attractive bowers and archways. The nurseries of Sikkim, particularly one at Rhenock, are well-known for their plants and seeds. In the rains all kinds of butterflies

Jacquarndas (Painting by Mrs. D. Krishna)

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Northern Sikkim (Painting by H. H. the Maharaja of Sikkim)

are out, dancing gaily in the woods. There is a rich variety of birds but relatively few animals, as they have been hunted excessively.

The trees are no less variegated than the flowers. The tropical rain forest gradually gives place at a height of 8,000 to 10,000 feet to conifers and oaks; nearer the tree line there are only birch, juniper and rhododendron. The scenery similarly changes from valley to upland meadow, mountain and rugged pass.

The State is surrouned by magnificent Himalayan peaks. Kanchanjunga (which means "the five great treasures of snow") is very prominent: it is moreover the patron spirit of Sikkim and is propitiated by an annual religious festival and dance. From the Nathu La and Jelep La passes (each over 14,000 feet high) one gets a fine view of Chomolhari (23,000 feet) the sacred and beautiful mountain of Tibet, while Western Sikkim is bounded by a whole row of Himalayan giants.

Northern Sikkim, now closed to visitors, has long been known as the trekker's and the mountaineer's paradise. Here at the foot of some of the highest mountains in the world are the Zemu Glacier, the Green Lake and the Lhonak Valley. Here also are the high summer grazing grounds of the Yak and the hardy Tibetan sheep which in winter are swept by blizzards.

On all the routes except in the remotest parts there are comfortable and well maintained dak bungalows, each with its own little garden. At every twelve or fifteen miles the traveller can rest or break his journey, and there is always a kindly chowkidar to attend to his needs. A trek in Sikkim is an ideal holiday for one who loves nature and simple living, or for an artist, or a writer—but not in the rains, for that is the season of landslides, which cause traffic to be suspended for weeks on end, and of leeches!

His Highness the Maharaja of Sikkim is himself an artist of note. He and his charming and intelligent family are chief among our many friends in that friendly and delightful land.

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A view of River Indus as it flows in its initial stage

The Indus

Padmini Sen Gupta

WE hear much today of the Indus Valley civilisation and of Mohenjodaro and Harappa, those ancient buried cities which have been unearthed by Archaeologists.

The Indus civilisation was one of the oldest vying closely with those on the banks of the Yangtse-Kiang in China, the Nile in Egypt, and the Euphrates and Tigris in Central Asia. Mohenjodaro was built beside the Indus itself in Sind, and Harappa by the Ravi in the Punjab, a river which is one of the off-shoots of the Indus. Both these ancient seats of culture were finally destroyed by inundations of the rivers by which they nestled, and it was not till 1922 that the site of Mohenjodaro was discovered by Mr. R. D. Banerji when a Buddhist Stupa was being excavated. Since then this city and its sister on the banks of the Ravi have been unearthed and much light has been thrown on the life of the ancient people living by these mighty rivers. The entire culture, dating back to about 3000 B.C., has been named the Indus Civilisation.

In Mohenjodaro, houses were built with bricks, and there was a definite plan to construct the city, much more organised and advanced perhaps than many of our towns of modern India. There were market place, stables, store-houses, and even a swimming pool. One can imagine those people, 5,000 years ago, basking in the sunshine on the banks of the Indus and dreaming their dreams. Each house had a bathroom, kitchen, cupboards, common rooms and a staircase. The drains were good and there were even dust-bins. The ancient people were a clean orderly race.

Grain was stored in clay jars or boxes, and there

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Indus flowing through Kashmir

were beds, chairs and stools. Bread was baked in ovens. Animals like oxen, dogs, sheep and elephants were trained to help men. Barley, corn, wheat and fruit trees were grown. Women spun wool and children played with home-made toys. Coins, jewels, images, bows and arrows, spears, knives and vessels were made. Boats were common. The people lived a comfortable happy life.

After the pre-historic civilisation of the Indus and the Ravi, typified by Mohenjodaro and Harappa, the Aryans come on the scene, of whom our Prime Minister wrote :

> "Can you not see them trekking down the mountain passes into the unknown land below? Brave and full of the spirit of adventure, they dared to go ahead without fear of the consequences. If death came, they did not mind. They met it laughing. But they loved life and knew that the only way to enjoy life was to be fearless, and not worry about defeat and disaster. For defeat and disaster have a way of keeping away from those who are not afraid. Think of them, these distant ancestors of ours, marching on and on, and suddenly reaching the banks of the noble Ganga, flowing majestically down to the sea. How the sight must have filled them with joy! And is it any wonder that they bowed down to her and praised her in their melodious language?"

But before the Aryans reached the Ganga they had settled on the banks of the Indus in the Punjab, the land of the five rivers. And it was here that the first book in the world, the Rig Veda, was composed, pieced together from the prayers and songs of those early settlers of this sub-continent. The Indus was one of the phenomena of Nature which greatly inspired them and they sang :

> "The irresistible Indus proceeds straight, white and dazzling in splendour! She is great, and her waters fill all sides with mighty force. She is wild like a mare, beautiful like a well-developed woman.

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The Indus has fastened horses to her easy chariot, and has brought food therein to us. The greatness of the chariot is extolled as mighty, it is irresistible and great and rich in its fame."

In the epics and Puranas and other ancient literature also the Indus is praised for its mighty life-giving waters, its generosity and kindness to the people, for can there be a kindlier friend of Nature than a river, which moistens the arid earth so that she gives of its abundance to her sons and daughters? But a river can also be cruel and unkind, and this the Indus certainly was for it often flooded its banks, changed its course and brought death and destruction in its wake. Through the ages then the Indus has flowed over the desert regions, bringing life with it, except when, in its anger, it at times swallowed whole cities, as was the fate of Mohenjodaro and Harappa.

The ancient visitors who came to this sub-continent, from Greece and Macedonia, China and Western Asia were no less astounded at the beauty and might of the Indus as those who settled on the fertile soil it watered. Strabo and other early Greek travellers believed the Indus to be the boundary between Persia and undivided India, and Megasthenes says it was as big as the Ganga itself. The rock of Aornos, which Alexander captured and which had been resisted by Hercules himself, was said to be laved by the waters of the Indus. Alexander also crossed the river by a bridge which he constructed.

The banks of this mighty river were said to have been the centre of famous international markets. Mush and spices, peacocks and precious stones were carried on the broad waters of this river. It was rich in shell-fish, and the destructive crocodile dwelt in its depths or basked on its banks, watching for its prey. Pliny mentions that the elephants found in the forests through which the Indus flowed were not as large as those found in Ceylon, and the waters of this sacred river, like those of the Ganga, were said to have possessed medicinal qualities. An ancient writer sings:

"The waters of the Indus are cool, light, delicious and counteract all diseases. They are pure, sacred and give intelligence, strength and courage. By bathing in this river, a person acquires the merit of an *Aswamedha*".

The source of the Indus is on the Northern slope of Mount Kailas in Tibet. For the first 500 miles of its 1,800 mile course, it flows through deep gorges in the Himalayas, through North-West Kashmir and the N.-W. Frontier Province, after which it turns South-West and descends to the plains of the Punjab. It was this part, watered by the Indus and its five tributaries, Sutlej, Beas, Ravi, Chenab and Jhelum, which the first Aryan hordes discovered.

One of the greatest engineering wonders of the world, the Lloyd Barrage at Sukkur in Sind, Pakistan, provides about 8,000 sq. miles of dry barren lands with water, after which, passing through rocky gorges and the deserts of Sind, the river finally falls into the Arabian Sea.

The drainage basin of the Indus is 372,700 sq. miles. The Indus is said to spring from a height of 17,000 feet, and drops to 8,000 feet in Baltistan, before receiving the waters of the river Shyok. Leh is a romantic place, for the Zaskar river joins the Indus here, and the great trade route from Central Asia crosses the river by the Karakoram Pass. During the glacial period, the Indus was said to have been dammed by huge glaciers and immense thicknesses of lacustrine deposits, which caused inequality of slope and the varying of the steepness of its falls.

Like the Brahmaputra, the Indus also has caused serious disasters with its floods, as it rushes down gorges and mountain valleys thus increasing its sweep on level courses. During summer, though it looks dry and almost fordable, a torrent rushes down from the mountains, making it suddenly dangerous. The nature of the Indus is shifting and uncertain.

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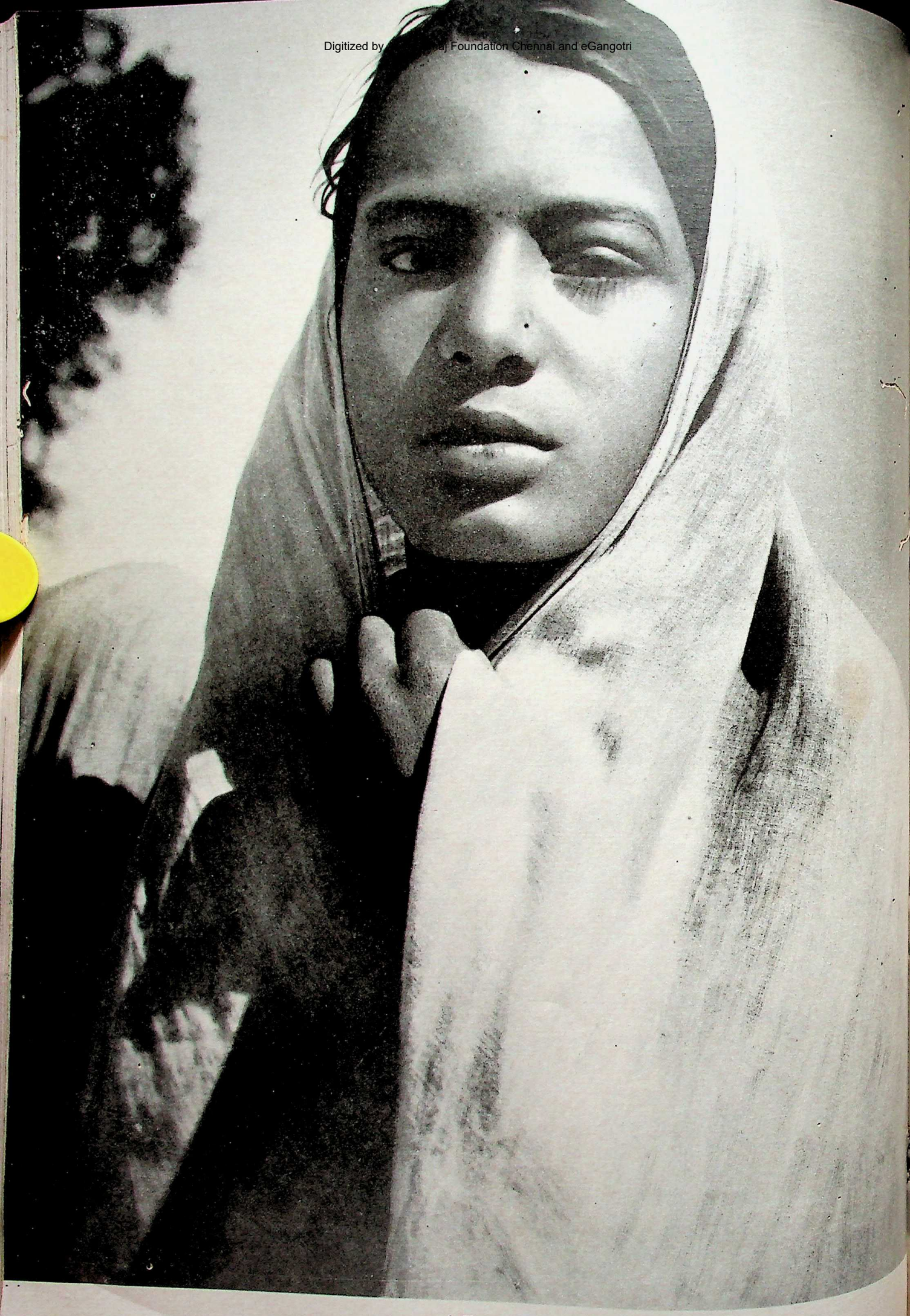

A Chero girl

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A Chero dance

The Chero Tribe of Bihar

D. N. Majumdar

THE Chero, though numerically not so large as some of the bigger tribes like the Ho and the Santal, are still an important tribe of Bihar. They are scattered over adjacent districts of the neighbouring states. They are found in Sarguja, and in the South of the Kaimur range. They claim to be the oldest inhabitants of Bihar, and own the hills and forests they now live in.

Whether they are connected with the historical Ceras and Colas, is a difficult question to answer, but their influence on other tribes and their dominant position in the tribal hierarchy, indicate their political status. Today they maintain their influence by sorcery and divination which they are supposed to practise, though the bulk of the Chero live by agriculture.

They are feared and dreaded by other tribes, and have earned an uncanny notoriety for their skill in magic and sorcery. In some parts, the Chero are regarded as treacherous people, and are believed to own diabolic powers which they use against men and women whom they want to chastise for acts of omission and commission. Yet the tribal people seek their aid to redress their grievances.

The Chero officiate for other tribes, as medicine-men and priests, and they placate the evil spirits whose exploits are invented by them. They memorise and render the exploits of the evil spirits and of gods who interfere in the life of the tribals, and these the Chero invoke on occasions to instil a fear of impending calamities which they only can avert by their magic.

The Chero are the *Baiga* or medicine-men of the tribal people. Many are found to practise regular seance on particular days of the week. In Palamau, the Chero are also known as the Parhiya and on the evidence of the physical features of both the tribes, there can be no two opinions about their ethnical association.

An old Chero narrated with pride, how they, the Chero, had the whole country under their grip, how they overran the whole of the deltaic region of Bengal. Col. Dalton has called the Chero as "the last ruling Kolarian tribe in the Gangetic province". Buchanon takes the Chero as of Dravidian origin. One often meets with a mongoloid fold among some Chero and one Chero, we met in Daltonganj, had distinct mongoloid features, oblique eyes, epicanthic fold, and a yellow-tan skin.

Some Chero are found to possess a high cheek bone, large mouth and protuberant lips with depressed and

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flat nose. Most probably the Chero belong to the proto-Australoid ethnic type and the Mongolian traits noticed among them, must have infiltrated through their mixture with the people of Bengal, among whom, particularly in the outlying parts, a mongoloid influence is known.

The Chero of Bihar on the whole are more advanced in culture than their colleagues either in Sarguja or to the South of the Kaimur range of hills. They are more Hinduised and they speak Bihari, with accent. Most of the Chero remember with pride the important role they had played in the past, even as late as the Muslim period of Indian history, when one of their chiefs ruled in Chayanpur, a town in the Sahabad district of Bihar. In Chota Nagpur, they are found scattered. Here they are of lighter complexion. Due to their political influence, they had probably more opportunities of mixing with the Hindu castes, thereby modifying their ethnic features.

Traditions of their origin are many and often inconsistent. Much of them is known to the other tribes and when the latter narrate the glorious past of the Chero, they listen with pride and interest. On the one hand the Chero cater to innumerable spirits and disease godlings, on the other, they worship many Hindu deities. The Chero in some parts of Palamau are found to worship the phallic emblem and also Kali, the goddess of destruction. The latter is represented not by an idol, but by a bazaar picture which they buy from the market and hang it on the wall of their sacred apartment where periodically they offer prayers and propitiate her. They have begun to observe Hindu festivals and this fact, it appears, has conceded to the Chero a higher social status, that of the "acculturated tribe".

The tribal people of Palamau and the neighbouring parts are on evil days. They are already doubtful about the efficacy of their indigenous spirits and godheads, so that a knowledge of the Hindu pantheon has secured to the Chero, a higher and more effective status. In some of the Chero villages, Brahmins are called in to officiate in their marriage and social ceremonies and the *Sradh* ceremony is now the concern of the Brahmin priest. This is logical, as Hinduisation, inevitably leads to the recognition of the priestly cult.

While the Chero is bringing the Brahmin priest to cater to his religious ceremonies, even in marriage, the Chero *Baiga* is fighting hard to maintain his tribal clientele and he has till now succeeded in doing so. Acculturation to Hindu culture has necessitated a change in their dietary, for the Chero forbid beef and even pork in some cases, though not generally. They keep poultry, rear sheep and goats to provide for sacrifice and a meat menu.

The Chero are exogamous and are divided into clans or sections, named after animals and plants. The present attitude is to marry within the village, or local group, though such marriages were tabooed in earlier days in response to the code of local exogamy. Their custom of exogamy, as recorded by Sir William Crooke, was always uncertain. The Chero never confined their marriages within the tribe, but did intermarry with the Bhuiyas and some writers have mentioned that the Chero and the Bhuiya were one people.

This the Chero deny now, but the political relationship that the Chero did forge with the Bhuiya must have encouraged such marriage alliances. In any case, outbreeding has been replaced by inbreeding. This may have been precipitated by one or the other of the following reasons: their uncanny powers are deterrent to social intercourse and unless other villages know them intimately, they do not enter into marriage alliances with them; the other reason may be the introduction of child marriage among the Chero.

An old Chero told me that he wanted his daughter to be married in his own village so that he could always see her, and look after her if necessary. Child marriage does not carry the obligation of early cohabitation and does not require the child wife to reside in her husband's village or house, before she attains the age of puberty and is considered fit for consummation. Child marriage has become very popular, due to Hindu influence.

The Chero have adopted most of the Hindu customs and practices. They worship their ancestors and offer regular libations to them. The Chero worship a collection of miscellaneous gods both indigenous and imported, in addition to those they have borrowed from their Hindu neighbours and some of them are alien and unknown, so that, their control of these spirits assuage fear and keep their profession of sorcery in boom.

Though agriculture is the main occupation of the Chero, the fertility of the soil varies from place to place, and most of the land owned by the Chero is rocky and inhospitable and gives little yield. Usually half the year or more, the Chero like most other tribes, depend upon fruits and roots and the product of the chase. Some are employed as agricultural labour on lands of their Hindu neighbours; many have learnt to migrate periodically to work elsewhere.

The Chero, we have already said, are the traditional *Baiga* of the tribal people and they are engaged by other tribes to redress their calamities and grievances. The Chero *Baiga* have used this privilege to their benefit and have succeeded in retaining thir clientele; while the Chero supply the witch doctors, diviners, and exorcists, some of the other tribes produce the witches, and other malevolent personnel, whose activities the Chero are asked to control.

Most of the tribes do not know much about the evil spirits, they have a vague suspicion about them, but the Chero give shape to this suspicion by inventing gods and spirits, benign as well as malevolent, so that the ordinary man is more and more helpless and comes to his tight grip.

Some years ago, I watched a Chero *Baiga* holding a seance, in a *deogharia* or house of spirits. He was to divine the causes of maladies and prescribe remedies. The *deogharia* is well-known and people from different parts of the tribal country visit it, for the *Baiga* is the oracle of the tribes. The secrets of the *deogharia* are

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carefully protected and publicity is considered as ominous to the informant. It was with great difficulty that I could prevail upon the people of the village to show us the processes of divination practised in the *deogharia*.

A crowd had collected at the *deogharia*, the entrance was blocked, and with great difficulty we could get access. It was a small low roofed hut made of mud and covered with thatch; our appearance sent a murmur through the crowd and comments about our visit became loud. Some in the crowd were anxious to know what made us, town-folk, visit the *deogharia* and others suspected our motives.

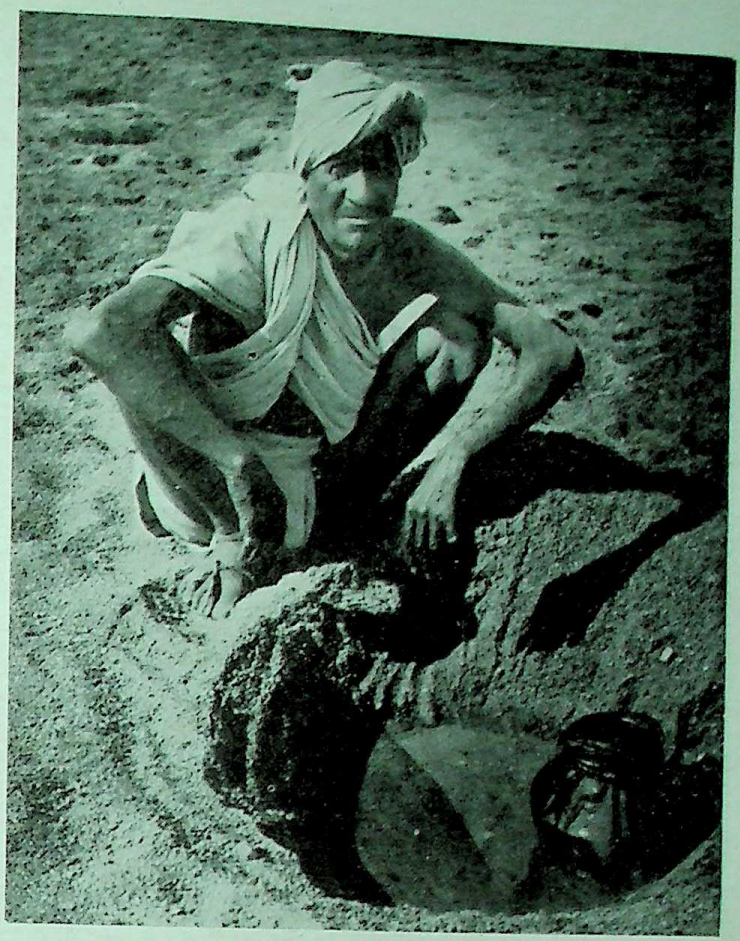
A tribal school master interpreted the purpose of our visit to the crowd, and a smile flashed from face to face. The Bhagat who holds the seance was a youngman of about 30 years, a Chero by tribe, his hair was hanging in curls all round his head. His appearance showed him to be a nervous and irritable person accustomed to an austere life but his sharp eyes revealed his shrewdness, and his knowledge of the world.

When we were comfortably seated inside the room, the Bhagat felt at peace and soon after began his customary weird rites. Our original estimate of his nervous disposition was soon belied by his consummate skill and his practised rites. Within the hut there was a raised platform built with earth which occupied half of the room. On this dais were kept a number of lethal weapons, a metal sword, a big *lathi*, a small steel trident, a pair of iron tongs, a few musical instruments, such as, brass cymbals, *mandol* (drum), *nagara* (kettle-drums), etc.

The sword had a blunt edge, which we discovered later was meant to minimise risks of experiments. On one side of the dais, was kept a crudely fashioned wooden model of a Hindu temple with spiked domes at the top, while the centre of the room was covered by a leopard's skin presented to the Bhagat by a disciple. On the inner walls of the mud hut, marks of vermillion had been stamped, mainly consisting of human palms impressed on the wall in vermillion. On the ceiling were hung up, several broom-sticks, a small hand *punkha* (fan) made of peocock feathers, two wicker baskets and one metallic shield.

A young boy aged 10 or 12, who was a disciple of the Bhagat, started preparing tobacco and when ready handed it over to the Bhagat with respect and obeisance. The Bhagat put the *chillum* to his lips and began to puff at it with great speed darkening the room with smoke. The necessary atmosphere was created and the *chillum* was handed back to the disciple. Then the Bhagat took a pair of cymbals and began to play on them.

The boy kept company by beating the drum and between them an uncanny tune was produced which sent a shiver through the crowd. The room now was suffocating. Soon this weird music had its effect on the Bhagat who began to rock his head to and fro, at first in slow pace, then faster, still faster, till a terrific commotion was witnessed, his curls dancing like



A Chero Baiga preparing for a weird rite

snakes round his head. This did not last long, it could not: soon after, the Bhagat became active, his eyes red and his hands became restless and he clutched the sword and began to brandish it violently, making us withdraw from his range.

The sword was now at the throat of the Bhagat, now at the stomach, driven deep into it and the Bhagat made shrieks which frightened us. This last act was enough to exhaust him, he lost his hold on the sword, his tongue came out, his eyes became fixed in dead pose and he simulated death. This was the trance he was in but it did not last long. Soon his head gained its erect position, his tongue was drawn in, his hair was completely shifted to its natural position, he looked at a vessel of water in front, and he adjusted his face in the water. He was already metamorphosed.

He was not the Bhagat but the spirit he had invoked, a smile of victory had settled on his face and he was again smoking his *chillum*, handed to him by his disciple. The smoke again went up and darkened the air, and it was in this atmosphere that he heard the questions of his disciples and began solving the routine problems of his clientele. This ceremony, he performs, at regular intervals and his accurate diagnosis and his prescription bring hundreds of people to his *deoghar*. The Bhagat holds considerable influence and he is respected by the tribals from far and near.

The Chero are the custodian of spirit lore in the village. They know charms and spells and are expert diviners and sorcerors. They are also witch-doctors and medicine-men. Their hymns and *mantras* are un-

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intelligible to the tribal people, because they are in alien language with mixed vocabulary rendered in sing song monologue. Many of the spells are couched in a mixed patois but many of the words are borrowed from Hindi or local vernaculars. While exorcising spirits, a Chero *Baiga* was heard to render the following text, which has been translated into English:

On the top of Dhaulagiri
Sits the God Siva with his disciples,
He lets his curls play.
From my heart I bow to thee
I derive from His power, I do things
Which even the Brahmin cannot undo
What of devils and Ojhas
O, son, take my advice
Pray and worship the Gods
What you part on account
The double is in store for you
And prosperity abound on earth
I command the elements

* * * *

I capture the Saturn and the Mars
I encircle the east and the west
I keep watch over the four corners of the world
Who else can do it?
Guru can do it
I, his disciple, I do that.

* * * *

I pray to my Guru,
Guru, my heavenly angel,
By his kindness rains pour in *Sawan*[1]
And flowers bloom in wild vigour
To such Guru
I pray for help.

The magical powers of the Chero are all acquired through long and intensive training given by the Guru. The selection of the Guru is of utmost importance as the efficacy of the charms and spells depends upon the competence of the Guru and his knowledge of the weird rites.

The Guru chooses his disciples and initiates his votaries and as the number of disciples cannot be increased in arithmetical or geometrical progression, the Guru creates lesser Gurus from whom ordinary aspirants have to take lessons. Every Chero is supposed to know some charms and spells, but he need not practise; yet he would not plead ignorance in the presence of others and even is prepared to render some spells to convince his neighbours.

When a Guru dies, there is often a quarrel between the disciples and unless the Guru nominates some one to succeed him while he is alive, his power may not descend to the disciples and his "school" of learning may loose its powers and ultimately may not hold the clientele. The effectiveness of the spells can be secured only by perfect rendering of words and this is not always achieved by the disciples. Thus, the degree of competence of the disciples determines the prestige and circle of admirers.

There is no much complexity in the nature of the text of the spells. The main principle underlying the text is its foreign origin. The spells are not necessarily malevolent, but they are twisted and altered accordingly to suit the purpose and the average man or woman finds them unintelligible.

As miseries abound in tribal life, and external agencies are believed to cause them suspicion runs to unbelievable length, and the fears of calamities and diseases that are manoeuvred for them by the sorcerors are overwhelming. Sometimes spells are cast but they do not result in any disease or loss of property. The Chero have an explanation for this. They explain such incompetence of their spells to counter-spells by more powerful Gurus. Some would caution you against meeting the Gurus, for the spells become charged with malevolence if the Gurus meet the person against whom spells are directed. If they spit in the presence of the person, there is no escape from the consequence of a spell.

The Chero is a power, an evil power in the tribal area of Palamau and the neighbouring districts, and he is the cause as well as the consequence of the uselessness and incompetence of the tribal gods and spiritis. He flourishes on miseries, but he creates an atmosphere in which normal life and health are also traced to his competence in keeping the coast clear. Ignorance and superstition coupled with the miseries of the tribal life, constitute his srength, and probably his weakness as well.

[1] A month in the Lunar Calendar.

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BOOK REVIEWS

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Gandhiji was the perfect answer to the prayer of the anthologist. He has written and spoken on almost every subject under the sun, and there is always some touch of originality in what he has expressed. Where the idea may not have been original, his way of expressing it, and the circumstances which evoked comment from Gandhiji were original. In this small book of 175 pages, Sri Prabhu has compiled from the pages of *Young India* and *Harijan* some 145 excerpts from Gandhiji's writings, speeches and letters. Among the letters is one which Gandhiji wrote to Churchill apropos of the latter's reference to the "Naked Fakir." There are also two facsimile letters which he wrote to Chiranjeevi Nirupama (now a medical doctor) in which he had disapproved of jewellery in view of the immense poverty of the majority of Indians. Almost each one of these excerpts has some anecdotal value. No collection of his writings can ever be devoid of that touch of humour which was almost second nature to him. To him life was far from a light-hearted affair, but that did not mean that he went about with a long face. In this collection we come across this irrepressible whimsicality of his. For example, when he asked the ex-Navy man who wanted his autograph, "How many children have you?" "Eight, Sir, four sons and four daughters," the man replied. Gandhiji said, "I have four sons, so I can race with you half-way." Again there was his declaration to the Customs authorities on his arrival in England (1931). Oscar Wilde, when he landed in New York, said that he had nothing but his genius to declare. Gandhiji told the Customs officials that he carried six spinning wheels, his old prison dishes, a tin of goat's milk, some *khaddar* dhoties and towels and "my reputation which cannot be worth much."

Though lightheartedness emerges at almost every turn in these anecdotes about him, the compiler has given his readers a fair proportion of Gandhiji's more serious moods. There is, for example, that incident at Cocanada when a number of dancing girls came for his *darshan*. He was not at all annoyed by their visit but when he learnt exactly what their profession was he was greatly upset and remained so for days afterwards. In fact at his next halt, at Rajahmundry, he spoke publicly of this evil and told his listeners, "Let us cleanse ourselves of the sins that kill the man in us and make us brutes."

The compiler is to be congratulated on the adroitness with which he has presented, in the pages of this small book, the many-faceted personality that the world and India knows as Gandhi, the Apostle of Truth and Ahimsa.

J. VIJAYATUNGA.

☆

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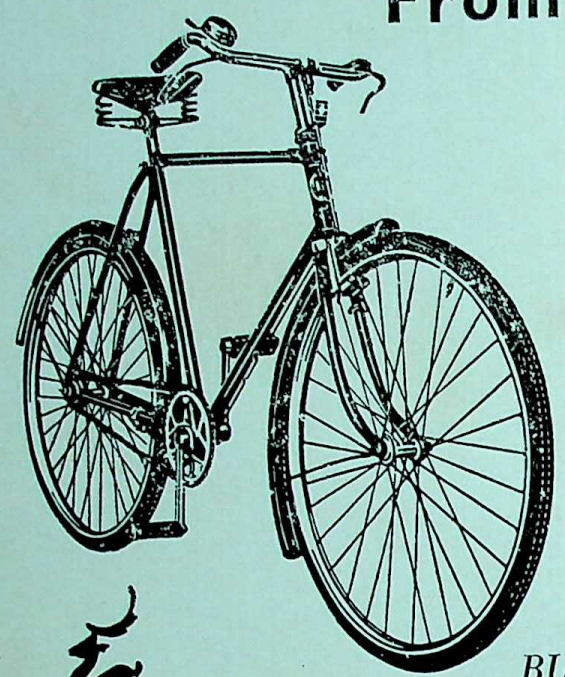

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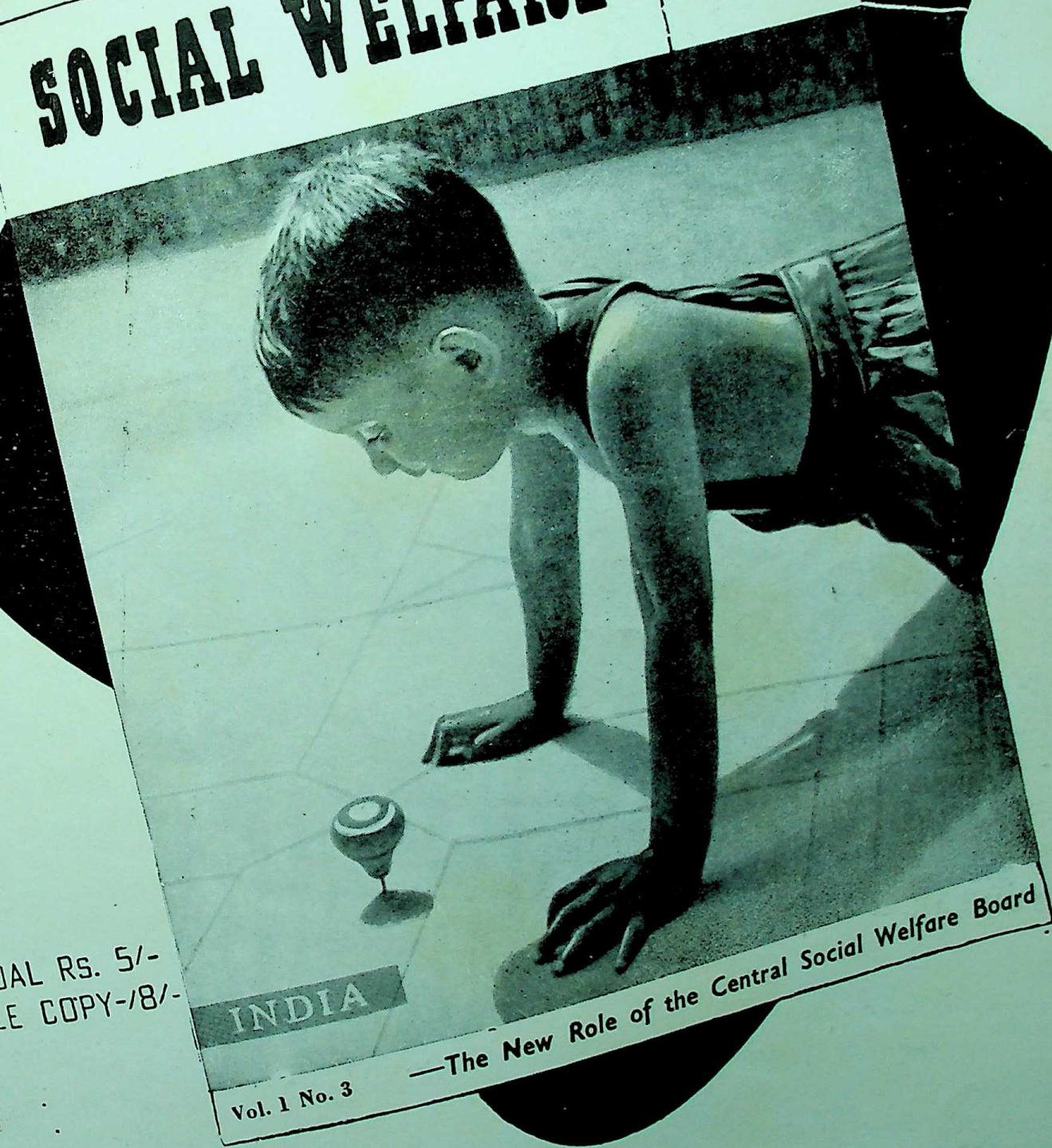

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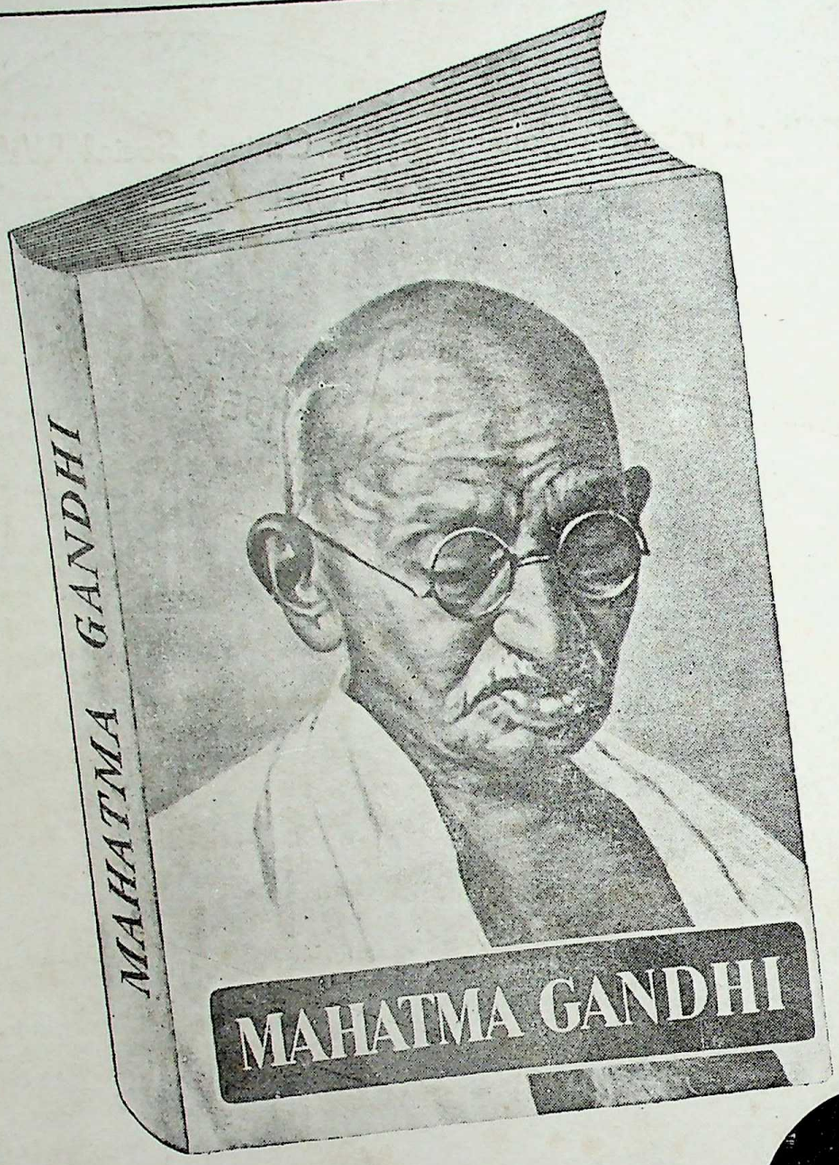

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The MARCH OF INDIA

Vol. VIII March 1956 No. 5

In this issue - - -

K. Rangachari	INDIAN ECONOMY IN 1955	5
J. Vijayatunga	1955 : BLUE PRINTS FOR PROGRESS ..	7
Sita Poovaiah	A DAY IN NEW DELHI AND A DAY IN NEW MEXICO	10
M. S. Krishnan	SCIENTISTS MEET AT AGRA	15
Bhabani Sen Gupta	THEY ALL CAME TO DELHI	20
H. D. Sankalia	CULTURAL OUTPOSTS OF INDIA—II ..	24
S. Dutt	ROUND THE FEET OF LORD BUDDHA—II ..	29
Suniti Kumar Chatterji	DRESS IN INDIA	33
Victor Rosner	NATIONAL EXTENSION SERVICE COMES TO THE TRIBALS	46
Jamila Brij Bhushan	TRENDS IN MODERN INDIAN JEWELLERY ..	50
Suryya Kumar Bhuyan	ASSAMESE LITERATURE—I (ANCIENT PERIOD)	53
	OUR CONTRIBUTORS	57

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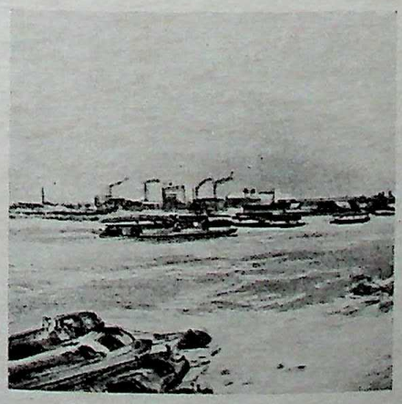

The painting on the cover by our Staff Artist, B. N. Jijja, depicts an enchanting scene at sunset of the river Hooghly which flows through Calcutta —the largest city in India. This river is an important link between India and the outside world.

Illustrated articles, short stories, and features of topical interest or cultural value are invited. All editorial correspondence should be addressed to the Editor, *The March of India*, Publications Division, Old Secretariat, Delhi. Contributions are paid for at our usual rates. The Editor does not hold himself responsible for the views expressed by the contributors.

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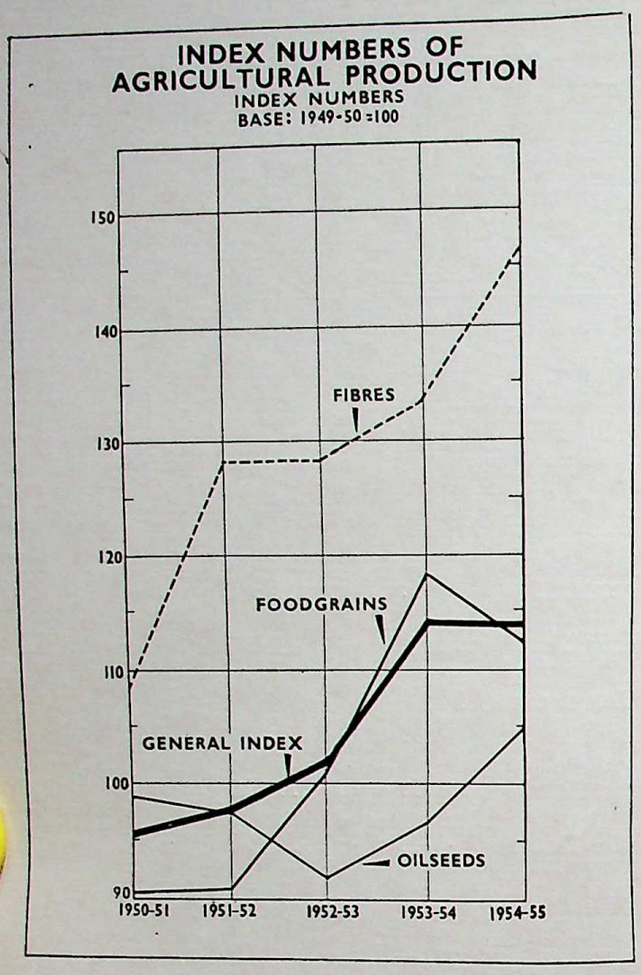

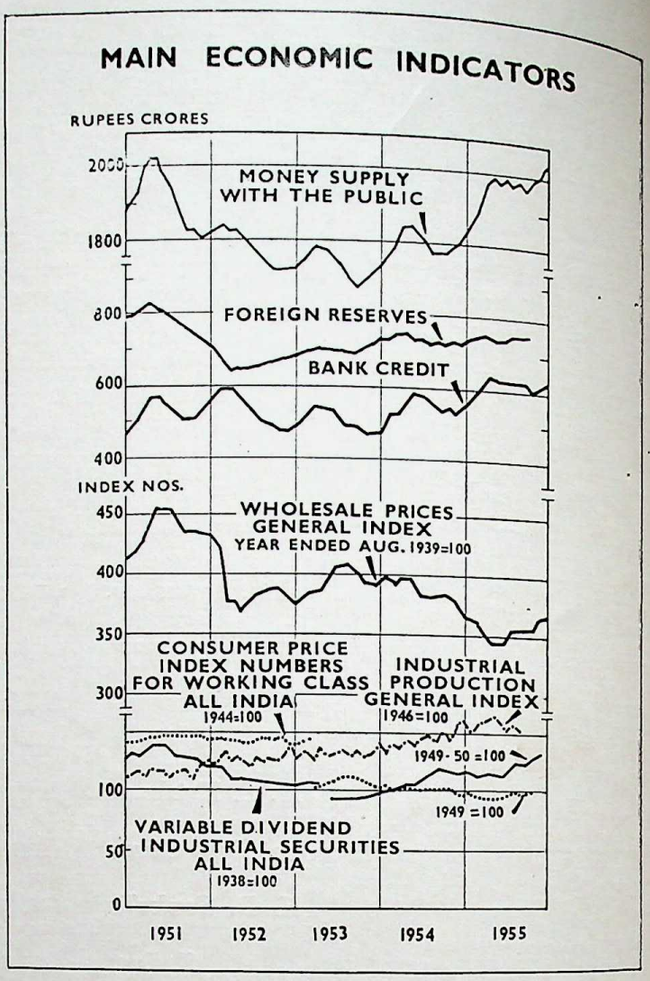

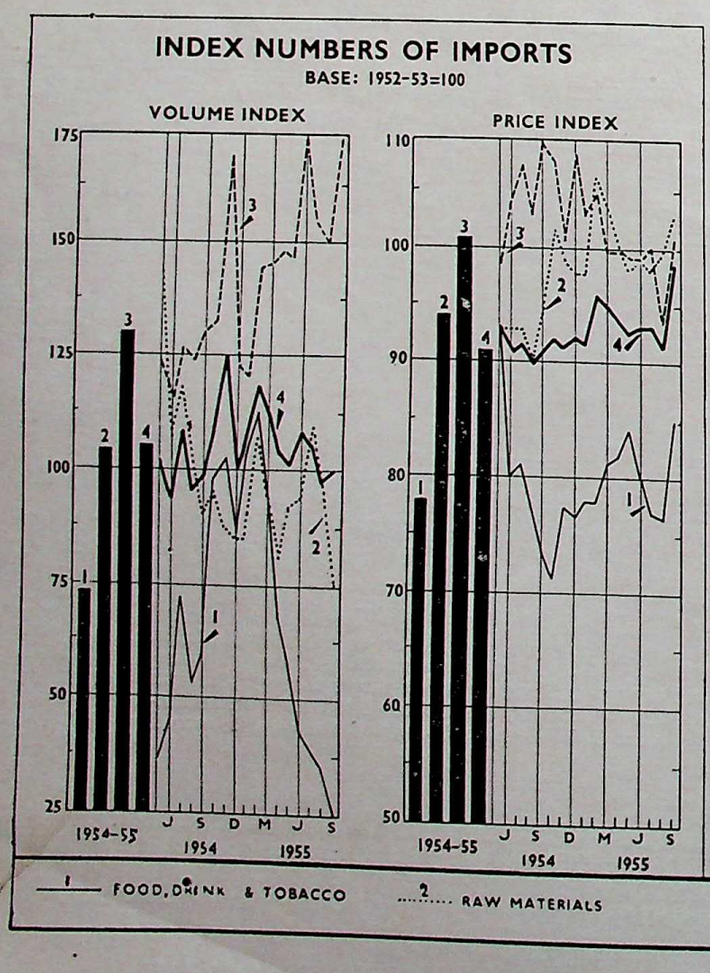

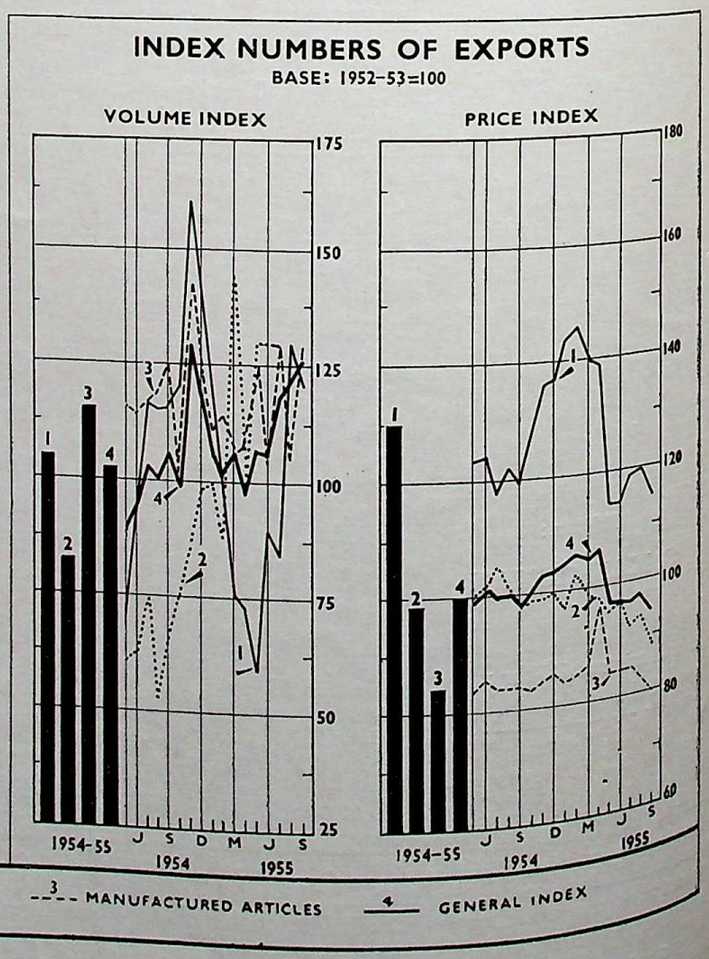

1 —— FOOD, DRINK & TOBACCO 2 ..... RAW MATERIALS 3 - - - MANUFACTURED ARTICLES 4 —— GENERAL INDEX

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Indian Economy in 1955

K. Rangachari

IN the year 1955, India entered the fifth year of her first Five Year Plan, the progress of which can be assessed only by a comparison of the economic indicators of this final year with those at the beginning of the Plan. The shape of the economy during the year was such as to justify the belief that the country has gone far towards achieving the objective of 'development with stability' which was the motto of India's Plan. The level of economic activity of the two earlier years was not only maintained but a substantial advance was also recorded, thereby reaffirming that the trials of the immediate post-war years were things of the past. The uncertainty with which the Plan commenced in the year of India's worst food shortage and the post-Korean commodity boom, was transformed into one of hope and it was in this mood that the Government and the Planning Commission were able to draw up a more ambitious Second Five Year Plan.

This is the background in which the state of the economy in 1955 should be viewed. The major components in India's economic prosperity have been her agricultural and industrial production which remained at high levels. In 1955-56 the index of agricultural production (1949-50 = 100) is expected to go up to 115, (from 114 in the two previous years), the implication of which is that the country has been able to maintain the achievement of 1953-54, which was at first regarded as an exceptional year. The final picture may show some difference but the significance of the estimate is that even in 1955, a year of the worst floods known in recent times, no serious setback would occur to shake confidence in planning for higher targets.

Within this general level of agricultural production, some variations occurred, which influenced the supply position during the year. The rice crop in 1954-55 was nearly 3 million tons lower than in the previous year; wheat showed a slight improvement while the production levels of other cereals and pulses were maintained.

There were substantial improvements in oilseeds, sugar-cane and cotton which exceeded the Plan targets, as the figures below would indicate.

Agricultural Production under the First Five Year Plan

(In Million tons)

	Base Year	*Target*	*Actual Production*			
	1949-50	1955-56	1951-52	1952-53	1953-54	1954-55
Rice	23.2	27.2	21.0	22.5	27.6	24.2
Wheat	6.3	8.3	6.1	7.4	7.9	8.5
Other Cereals	16.5	17.0	15.8	19.2	22.4	22.6
Total Cereals	46.0	52.5	42.9	49.1	57.9	55.3
Oilseeds	5.08	5.48	4.93	4.65	5.46	5.88
Pulses	8.0	9.1	8.3	9.0	10.5	10.5
Sugar-Cane (raw sugar)	5.62	6.32	6.00	5.02	4.46	5.55
Cotton (Million bales)	2.91	4.17	3.13	3.13	3.97	4.30
Jute (Million bales)	3.28	5.37	4.68	4.61	3.13	3.15

The initial effect of this sustained level of agricultural production was to cause an easy supply position, particularly after the harvests during spring of 1955, so that prices tended to decline rather steeply in the main commodity markets. The Government of India and State Governments announced their readiness to buy grain in the markets if prices fell below certain levels; permission was also granted for export of rice, wheat and jowar. These steps reversed the price trends rather quickly, and there was moderate recovery in grain prices in the third quarter of the year; towards the end of the year the situation was one of increasing prices of grains under the influence of a high level demand and some speculative activity. It was clear that the accelerated rate of development expenditure under the Plan was having its effect on prices. The policy of the Government was adjusted to this change and sale of grain from Government-held stocks was undertaken till prices were brought below the reasonable maxima. In view of the earlier condition of plenty, the Government restricted its imports of foodgrains during the year to 435,000 tons of wheat and 264,000 tons of rice, the total of which was only a fifth of the level of imports at the beginning of the Plan.

This capacity to keep prices within a reasonable

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range, with moderate imports and with only limited intervention in the markets is a measure of the progress made in the last three years. It is now felt that the turn for better, which the economy took since the middle of 1952, was no temporary feature due to fortuitous good seasons only, but a permanent improvement caused by a number of factors like irrigation facilities, supply of seeds and fertilizers, food decontrol and the development of plan-consciousness in the rural sector which has led to the adoption of improved methods. The floor of Indian agricultural production was itself rising as a result of these measures.

Indian industrial production also maintained the continuous upward trend which began in the first year of the Plan. The General Index of Industrial Production which stood at 105 in 1950 (1946 = 100) rose to about 159 in 1955, an increase of 50 per cent in five years. While in the first two years the increase in output was due to a fuller utilisation of installed capacity, in the later years, the effect of expansion of investment programmes under the Plan was visible, the most important among these being paper and cement. In 1955 the sugar industry reached a peak output of 1.63 million tons. Steel production reached the highest level of 1,264,000 tons and foundry grade pig-iron output was 458,000 tons. The output of the jute goods increased to 1,080,000 tons and a gradual process of unsealing of idle looms commenced during the year. The production of cotton yarn of 1621.5 million pounds—another peak figure—enabled the outturn of 5,046 million yards of mill cloth and 1,370 million yards on the handlooms. But the most notable advance was recorded in engineering products. In the automobile industry there was an increase of 50 per cent in production, from 14,462 cars and trucks to 22,528. The bicycle industry manufactured 480,000 units as compared with 372,365 units in the previous year and 100,000 sewing machines were manufactured, representing an increase of 25 per cent over the previous year. Diesel engines, machine tools, razor blades, radio receivers, service meters, chemicals and fertilizers, matches and rubber tyres—all these items proved the all-round increase in industrial production and the general climate of expansion which prevailed during the year, because of the widening of the domestic market and opportunities for exports. There were hardly any significant exceptions to this upward trend in Indian industry during the year, which recorded an increase of 8 per cent over the previous year.

This development of industry on a stable agricultural base was an encouraging factor in the preparation of the second Five Year Plan with a heavy accent on basic industries like steel and machine-building. The supply of raw materials for industry, like cotton and jute no longer constituted a serious problem that it was five years ago. A new limiting factor, however, is the shortage of steel needed for the engineering and transport industries. The railways have to be developed further if they are to be in a position to carry all the traffic that has been offering itself as a result of this industrial expansion. Even the moderate outlay under the first Five Year Plan for rehabilitating the railways, of about Rs. 4,180 million, has helped to increase the volume of goods traffic carried from about 96.7 million tons in 1951-52 to 115 million tons in 1955-56, with a 10 per cent increase during this period in the annual ton-miles moved. The bulk of the investment had been in rolling stock and the index of operational efficiency, as measured by the net ton miles per wagon day, reached 485 in 1954-55 on the broad gauge section, which was 34 points higher than the war-time peak and similar improvement was recorded even in the metre gauge section. However, the traffic offering itself still remains in excess of the railway capacity to carry and this excess will grow with the development under the next Plan.

In the field of foreign trade, the only significant factor was the higher value of exports, due largely to the larger volume of oils, oilseeds, shellac and raw cotton exported. There were slight declines in the export of textiles and in the earnings on tea and spices. But, on the whole, the value of the trade in merchandise has shown a much smaller deficit than in previous years because imports have remained at a stable level. When the invisibles are taken into account a surplus in the balance of payments will emerge at the end. The year 1955 thus ended without drawing on India's sterling balances, providing another hopeful factor for the second Five Year Plan.

In the monetary sphere, a major development was the steep rise in money supply in the first three months of the year. This was a consequence of the high level of development expenditure through deficit financing. It is noteworthy that this phase corresponded with a period of declining price level so that no inflationary pressure resulted. The banking system responded to the increased demands arising out of development and the bill market scheme was further expanded by the Reserve Bank to meet the seasonal requirements of the banks. The capital market derived strength due to these factors and the response of the market to the Government's National Plan Bonds (Second Series) of Rs. 1,000 million and to certain private issues was quite satisfactory. The widening of profit margins in industry as a result of sustained demand and increasing productivity and the greater emphasis on industrialisation imparted support to the equities market. It was thus a highly buoyant economy that India had during the year and there have been no dark corners to affect the optimism for the future that it has generated.

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1955 : Blue Prints For Progress

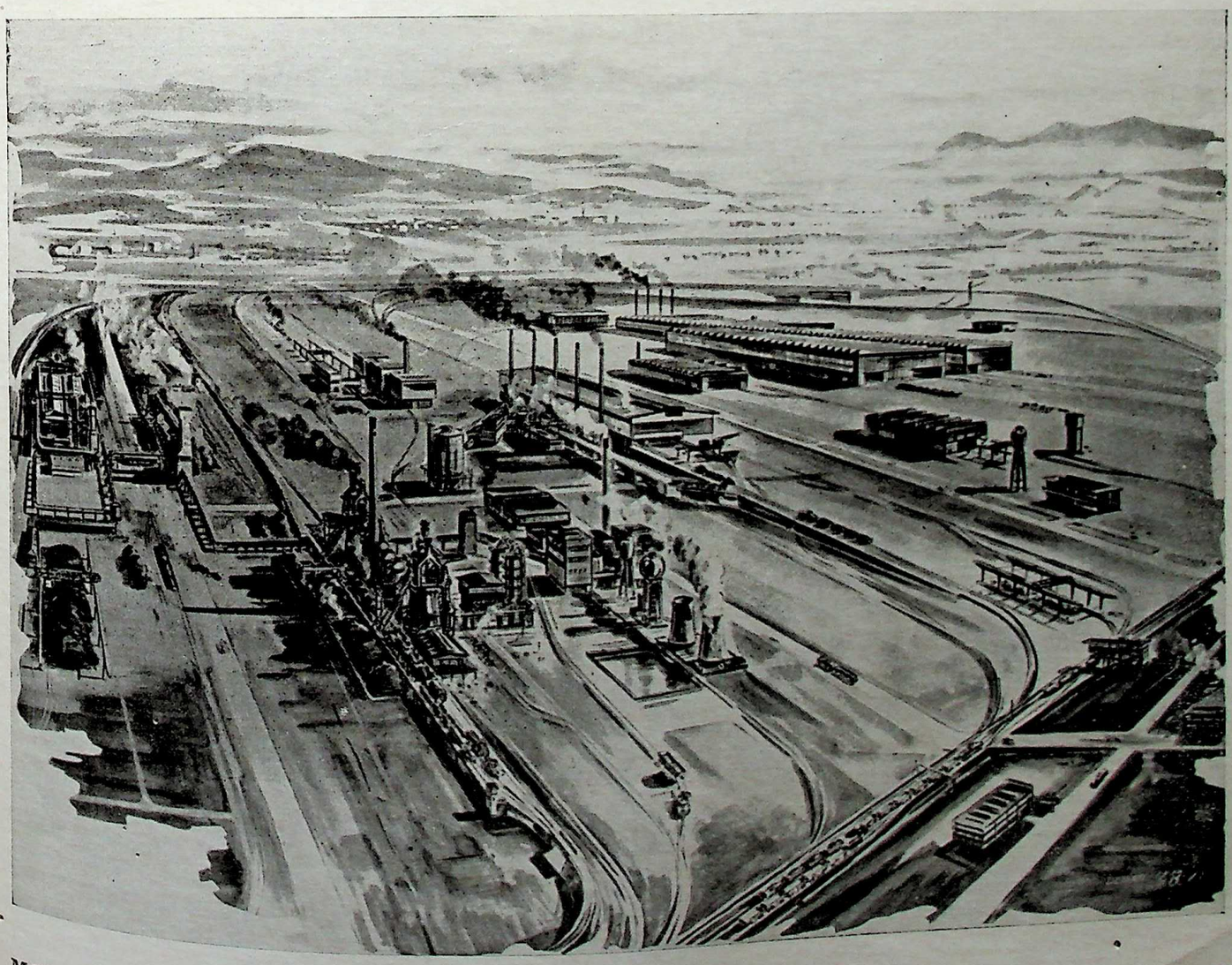
J. Vijayatunga

A COUNTRY shows wear just as an individual does. Those who look for gloss and glamour year after year, reckoning each year as so many years after Independence, are likely to be disappointed. They ask for spectacle : not for sober reality. I do not think that this class is representative, but India would not be the democracy it is, if we did not make allowance for a minority of dissenters and those who would like to count the things undone rather than the things achieved.

Among the hundreds of foreigners who visit India yearly there are many who assess India's progress critically. They have all paid a tribute to India's progress during these short eight years. Not all of them could have done so out of politeness. They have observed a definite all-round progress, social as well as economic. None of them could have failed to notice the optimism that streaks right across the country. The days of shortages and controls are over—for good, many of us think. There may not be the abundance that a nation of three-hundred and seventy-three millions could wish for but certainly we have left behind famine conditions.

Simultaneously with this the observer must have

A sketch of the proposed Rourkela Steel Plant which is being set up in India with the assistance of a German firm



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noticed that Freedom is a reality with us. Freedom of the individual—to worship as he chooses, to educate children as he will, to work and think according to his inclination—this birthright of Freeman is, I believe, more evident in India today than in any other country. This would be a sweeping claim if it were not true. But it happens to be true.

The very existence of so much disagreement with Government policy proves this. No other country within so short a period of independence could afford to allow so much criticism. But the nation's leaders feel (and rightly) that "growing pains" are accompanied by groans and grumbles. It is not only not humane to suppress these but it is psychologically wrong to do so. In the individual suppression leads to both physiological malformation and psychological maladjustment.

Having just emerged after a century and a half of suppression and repression it is natural that we should want to indulge in the luxury of criticism, protests, demonstrations and strikes. So we have had strikes of bank employees, demonstrations on behalf of a Punjabi-speaking province, and we have in Tamilnad continual demonstrations on behalf of a Dravida Federation and continuous protests against the imposition of Hindi. Actually there has been no imposition of Hindi but a tendency to popularise Hindi in view of the Government's declared intention to make it the official language in another ten years' time. As for protests against what is regarded as an affront to national integration there are still many Welshmen who would like a separate Wales just as there are some Scots who refuse to acknowledge the British Queen as their sovereign.

Considering that the Indian experiment in democracy is still in its infancy the measure of courage and daring shown by the Government not merely in planning for the immediate future but also in allowing such devastating criticism of its policy proved that the Government is governed by the governed. I use this rather paradoxical phrase to emphasise this aspect of the freedom we are enjoying today—the freedom of free speech and public comment. It is only people who have forfeited the freedom of speech, assembly, and public comment who can appreciate the vast measure of freedom the people of India are enjoying. This freedom extends to the Press and this fact has been confirmed by the least compromising foreign critics.

Most democracies progress by trial and error. India benefiting from the experience of other democracies has been the least subject to trial and error. Charting the economic progress of so vast a land as ours simultaneously with political adjustments is a perilous job. It is easy enough for us sitting in our easy chairs in club or at home to criticise those whose hands control the helm. That the latter have maintained a steady course indicates that they enjoy the confidence of the nation and that the very criticism of the Government is in itself an indirect mandate from the people.

With the people enjoying representation in the legislatures, central and provincial, Government's policy in all major undertakings has been consistently to gauge public reaction. Thus, the biggest project placed before the country during 1955 was the Draft of the Second Five Year Plan. The draft Plan Frame has been widely discussed in the Press and in Parliament, there have been minutes of dissent, and there will be further discussions in Parliament and among the Panel of Economists and other Advisory Bodies and in the National Development Council before the final Plan is launched, probably by the end of March 1956.

The First Five Year Plan laid emphasis on agriculture: the Second Five Year Plan, having in view the socialistic pattern of society, emphasises Industry and Transport. Though the Panel of Economists have made it clear that "the greater weight the investment pattern assigns to industry and mining has our full approval" it is unlikely that there will be any hard and fast list of priorities for development schemes. Among other objectives of the Second Five Year Plan is the creating of twelve million jobs entailing an investment of Rs. 10,000 million by March 1961.

The main objectives of the Second Five Year Plan are:

(i) A sizeable increase in national income so as to raise the level of living in the country.
(ii) Rapid industrialisation with particular emphasis on the development of basic industries.
(iii) Fuller employment.
(iv) Social Justice.

The next important issue placed before the country during 1955 was the reorganisation of States. Linguistic States had been one of the reforms aimed at by the National Congress in its programme after independence. Language is a basic concept of national intergrity the world over and no democratic Government can afford to ignore linguistic claims. One linguistic State, namely, Andhra, was formed and the States Reorganisation Commission recommended further regroupings. But these recommendations have aroused strong disagreement and bitter controversies and one of the main tasks confronting the Government in the first months of 1956 would be the solution of this domestic issue. The Prime Minister has suggested the creation of five zonal divisions and in conformity with this suggestion the Chief Ministers of Bengal and Bihar have submitted a plan for the merger of these two states. This is likely to be a strong internal

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problem but it is not insoluble and 1956 must see a harmonious settlement.

It would be unstatesmanlike to regard controversies of this nature as negligible or distracting. Actually they are an indication of the robust health of the nation. What should be noted is that these internal problems have fallen into place and have not got out of hand to such an extent as to retard the major progress of the country on the economic front.

In conformity with the Government's policy of non-alignment with any particular nation on the political level India has accepted co-operation from several countries in furtherance of her immediate industrialisation plans. England, Germany and Russia have all been invited to build steel plants in India. The Russian iron and steel works are in Bilhai. Two well-known German firms, Krupp of Essen, and Demag of Duisburg are now engaged in setting up the Rourkela Iron and Steel works, one of the greatest schemes ever projected in South-East Asia.

Rourkela, a small village in Orissa, 248 miles from Calcutta, and skited by the river Brahmani, will in the course of the next four years be transformed into a model township with the most modern layout. There will be model homes for seventy-five thousand families (an average family being reckoned as consisting of five persons) and further accommodation for another 25,000 families, those who will provide the town's daily needs. Each house will be detached, in its own garden, while parks, gardens, schools and recreation centres and sports grounds will be on community lines. Green belts will separate each community of 5,000 people from the next.

When completed, by 1960, Rourkela will have an annual output of one million tons of ingot steel. Hindustan Steel Ltd., most of the shares, of which are held by the Indian Government, will manage the plant.

This is only one instance of India's blue prints for progress. In furtherance of her Second Five Year Plan India is accepting technical as well as financial aid from foreign countries. According to Mr. G. L Nanda, Minister for planning, India will require Rs. 11,000 million foreign capital during the second Five Year Plan. India is not yet self-supporting as far as capital goods, heavy engineering and electrical equipment are concerned. But the present rate of progress—in river irrigation, hydroelectric and port projects—if maintained will make India self-sufficient in the next few years.

India's position in Asia in the years ahead was well exemplified by the Indian Industries Fair which was organised by the Federation of Indian Chambers of Commerce and Industry. Twenty-one foreign countries participated in this, the biggest ever to be held in India. The Fair grounds on Mathura Road, covered seventy-four acres. Not the least interesting of the pavilions was that of the Ministry of Works and Housing—a pavilion on an area of 46,000 square feet in which were exhibits of State enterprise. Here one was enabled to glimpse into the manysided activities in Indian aircraft plant, in shipyards, in workshops manufacturing telephone equipment, in fertiliser plants, in steel factories and at our river-dam projects. The Indian Industries Fair was indeed a great event, apart from its commercial importance.

The year under review also saw India in the role of mediator in international issues and advocate of those countries which are still under Colonialism.

An indication of India's growing importance in the international sphere was the number of distinguised foreign visitors to this country during 1955. The King of Saudi-Arabia, the Prime Ministers of China and Burma, and the Prime Minister of Russia, Mr. Bulganin, accompanied by Mr. Khrushchev these were the more prominent visitors.*

The one sad feature of 1955 was Goa. Many political observers have praised India's restraint over this issue. Goa will eventually be freed from Portugal's dominion but how soon it is difficult to say.

The feeling of buoyancy that has pervaded India during 1955 was well summed up in the Republic Day Parade on January 26, 1956. The displays of the Armed Services, the cultural pageant, and finally the march of the Delhi peasants well summed up India's multiple progress. Might and power is not India's ambition but the well-being of her millions of peasants.

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* See article, "They All Came to Delhi" on page 20

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A Day in New Delhi and A Day in New Mexico

Sita Poovaiah

A strange medley of sound awakened us at an unnatural hour in the morning. The frenzied blare of motor horns mingled with the trot, trot of hundreds of horses; the continuous tinkle of thousands of cycle bells vied with the varied cadence of voices gushing out of a million throats. Over all this strange confusion of sound floated the soft strains of a Nagaswaram heralding an auspicious morning. The day dawned bright and beautiful dispelling the gloom of the preceding days. Cars and carriages, cyclists and pedestrians were all converging towards one magnetic centre—the Rajpath. Delhi was celebrating the Republic Day !

My mind flashed back to that other day when in another land, my friend and I were also part of a vast throng speeding headlong towards another centre of attraction. Automobiles vied with buses, while planes droned above; there was much speed but little confusion as thousands rushed past towards Gallup, the southern capital of another race though named "Indians". Bearing the same name as we do as a result of a navigation-misjudgment, the American Indians, as they are known, had gathered together in thousands for their Inter-Tribal Dance Ceremonial.

It was not an historical occasion. There was no military march nor the rigid conventions of protocol to lend solemnity to the celebration. Indians had flocked to Gallup in New Mexico (USA) from the plains of Oklahoma and the Painted Desert of Arizona, from the Canadian border in the north and the Mexican frontier in the south. They had gathered together for their annual Pow-Wow to sing, to dance, to hold Rodeos and to exhibit their crafts. Similarly, in Delhi, Hill tribes from their scattered forest homes and simple folk from all the states, from the Himalayan heights to the foot of Kanya Kumari, from Saurashtra in the west to Kamarupa in the east had flocked in their hundreds to participate in the celebrations that formed part of the Republic Day.

For those of us who had striven and sacrificed for this day, the imposing sight of our own elected President, driving in state, led by a cavalcade of bodyguards all red and gold and glitter, was indeed a fulfilment of a lifetime come true. Equally impressive was the parade of the three forces, significant of the country's preparedness for any eventuality even though pledged to the cause of peace. Attractively colourful floats passed by, symbolising the efforts and achievements of each of the states. In their wake came the dancers. Group followed group in their variegated, picturesque costumes lending a glow and a brilliance, a note of joy and verve, to enhance the thrill of the occasion, and to make it truly national.

Once again my mind wandered to that other day in the States, when Gallup also began the day's celebrations with a picturesque early morning parade. Led by 'granite-faced' Indians, the spectacular procession danced past, through streets gaily decorated with waving banners and fluttering buntings. The strong, powerful faces of the men seemed carved out of the Grand Canyon. Their brooding stillness offered a challenge to our curiosity. Was it the sullenness of a race once masters of a great country and now forced to live in reserved areas; was it the grudging submission to a new form of belief and culture which interfered with their own age-old rituals and ceremonials? The gay feathers and the bright scarves contrasted strangely with those impassive and strongly handsome faces.

The women, plump, round-faced, high cheek-boned, narrow-eyed, clad in homespun blankets and heavily jewelled in turquoise and silver touched familiar memory chords. The kinship in face and features, in costume and jewellery with our own round-faced, high-cheek-boned, narrow-eyed women from Tibet, Sikkim, and North-East Frontier Agency was intriguing indeed. These also were clad in simple blankets, and had their fair share of coral and turquoise set in heavy silver ornaments. I recalled that fascinating group of Zuni Olla women moving nonchalantly down the road. Black blankets wrapped tightly over bright blouses, contrasted strikingly with the immaculate white leggings and moccassins. The onlookers gasped as they passed by. Laden with bracelets and necklaces, rings and earrings—enormous turquoises set in fine silver, each was a fabulous bank in motion. They carried interestingly painted pots unsupported on their

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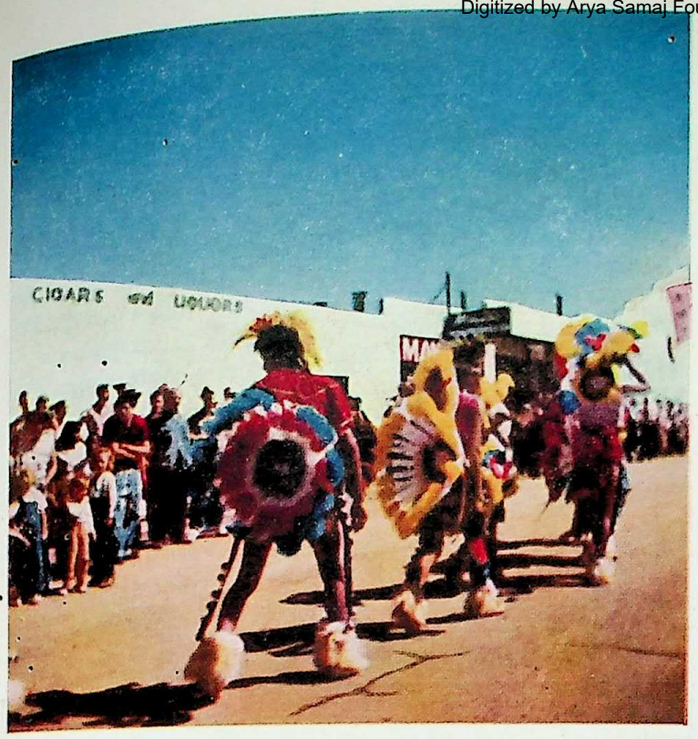


Cherokees from Oklahoma

Cheyenne Indian women wearing embroidered Buckskin

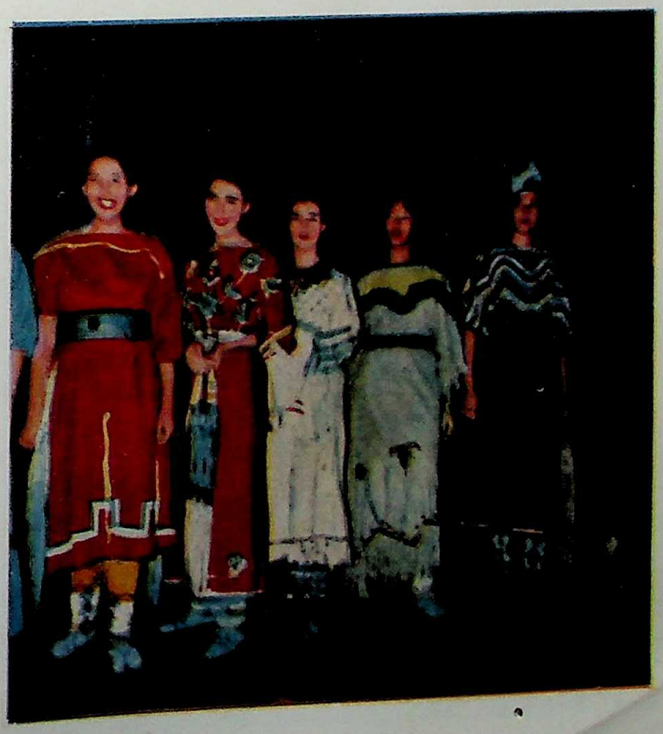
heads, each design being significant of some inner meaning. They reminded me of our *gummer* and *garba* dancers of Rajasthan and Saurashtra, who dance from house to house during the Navaratri festival, carrying pots either perforated and flame lit or coloured and containing shoots of wheat or rice.

The parade in Gallup moved on. The Sioux Indians from the north and the Cherokees from Oklahoma were resplendent in their gay feathers which descended in a cascade of colours from head to foot. Many hued feathered plaques at the back, knees and arms added to the brilliant sight. Some wore beautiful leather jackets heavily embroidered with shells, beads and quills, and others wore silk and satin outfits reminiscent of Spanish influences. A group of Cheyenne women passed by. It seemed incredible that buckskin, soft and golden hued, draped over the shoulders and caught at the waist, could fall in lines so classic in beauty and simplicity.

They danced as they passed. At one moment it was the Jamez Indian doing his very sedate Buffalo dance; at another, in lively contrast came the merry group

Close up of the Parade in New Mexico

Bead-embroidered American Indian costumes



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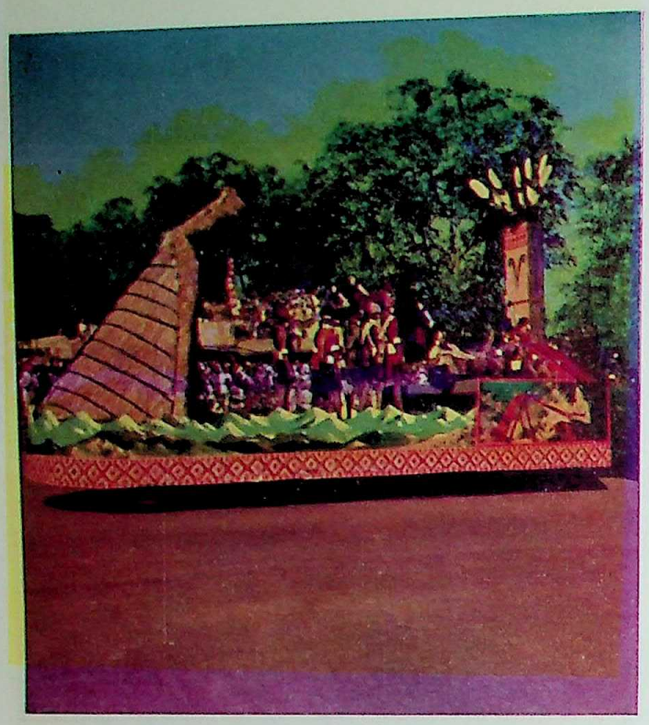
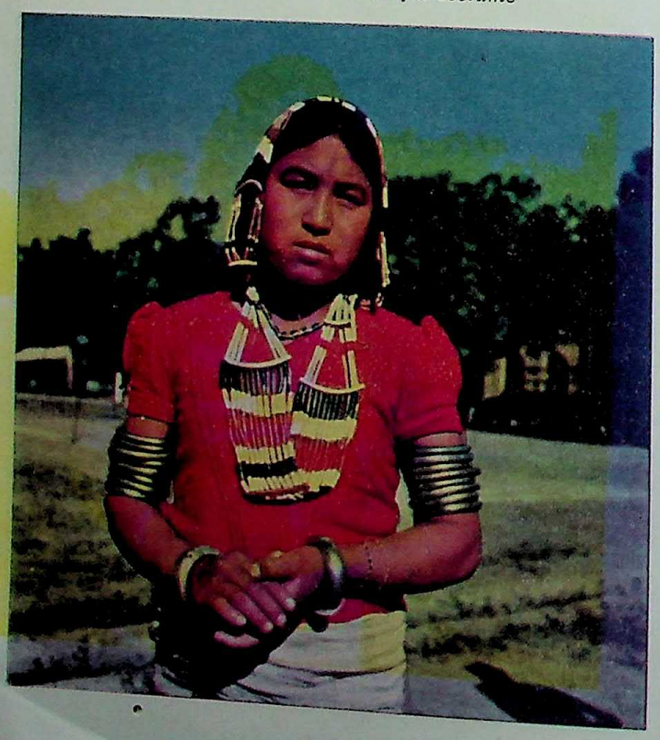


NEFA tableau shows a 'Morung'—a Naga bachelor's chummery. It is the pivot round which the social life of tribesmen revolves

from Oklahoma with lightening steps and jingling bells. The former, dressed in dark brown and black tights wore a headdress of leather and fur with polished Buffalo horns surmounting it; the latter, gorgeous in flamboyant feathers was ever obliging to the innumerable clicking cameras. Came the Taos hoop dancers juggling in and out of hoops with such intricate and tireless steps that it seemed almost magical.

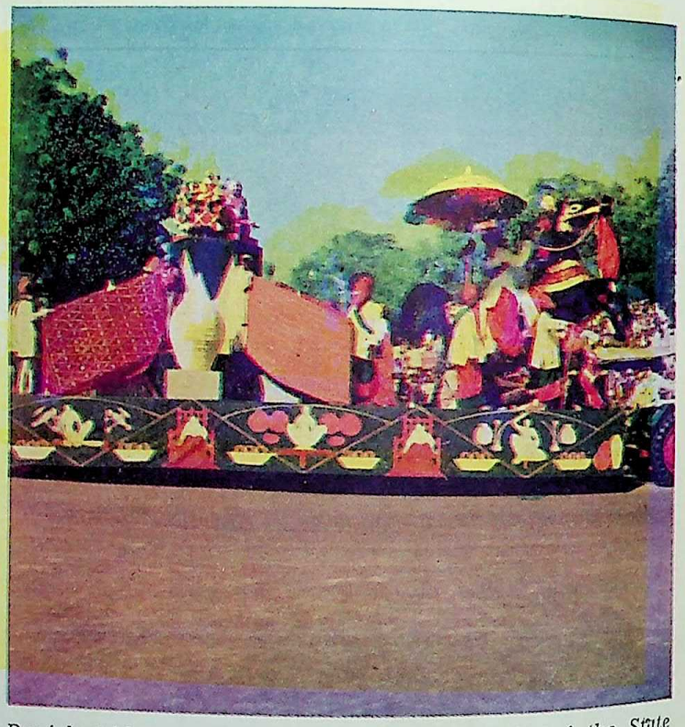
They passed all too quickly and too tantalizingly

A Naga girl in her colourful costume



just as group after group flitted past the President. Where our Indians lacked in colourful feathers they made up with the brightness of the costumes and the richness of the trimmings. There were the Rof dancers from Kashmir in green and cerise followed by the demure dancers from Sikkim in long dark robes brightened by multi-coloured, striped aprons. The Jadur dancers from Bihar displayed their share of red and white feathered tufts while the Maria tribe from Bastar danced by with their magnificent Bison-horned headdresses so very much like their counterparts in Gallup, New Mexico. The dainty girls from Manipur with long flowing hair and unusual costumes, seemed to glide away, while their sisters from Rajasthan and Madras made their presence felt by the brightness of their dress and the verve of their dance.

All this was but the aperitif for the feast that was to follow. With nightfall came the regular perfor-



Punjab tableau depicting the main handicrafts of the State

mances, staged in extensive open air arenas. Gallup had the star studded heavens as a fitting canopy for her dancers, while Delhi, providing a Shamiana, robbed her dancers of a certain atmospheric quality. Bonfires flared up from the surrounding hilltops in Gallup and responsive bonfires lit up the otherwise darkened arena. Flame-lit and with the pungent aroma of pinecones filling the air, the performance commenced. A sense of competition prevailed in their arena as well as in ours, as group after group began to unfold their ancient dances rooted, perhaps, in more than a thousand years of history.

Racially different, geographically occupying two sides of the world, the similarity, nevertheless, between the dance of the two Indian peoples was striking. The affinity ran through almost all the facets of the dance.

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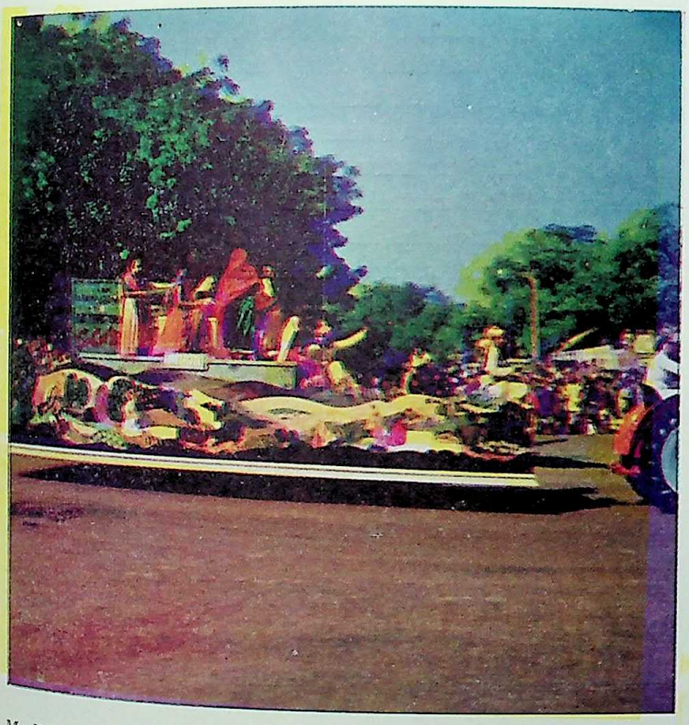
from the subject matter of each to the formalised outward pattern, from the content, in short, to the purpose of the dance.

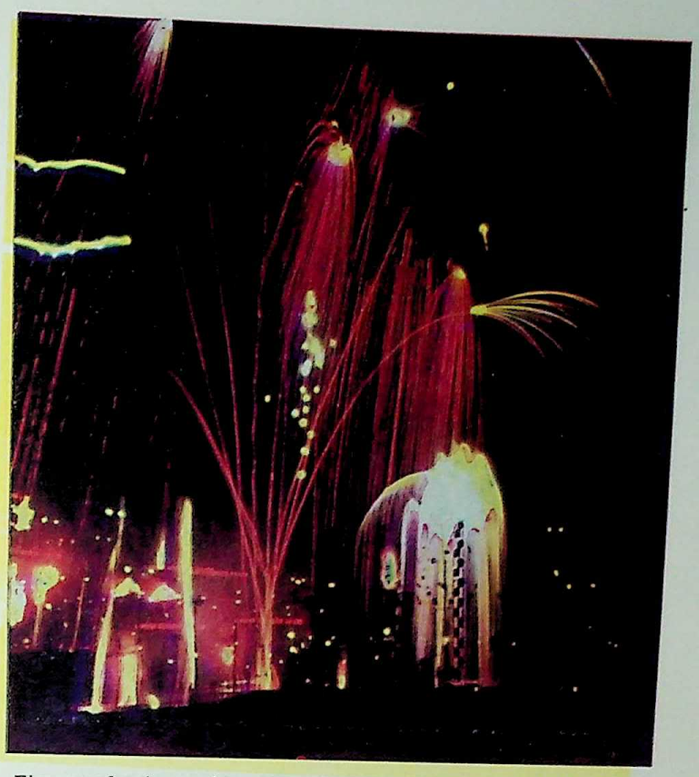
Both the groups had their occupational dances connected with daily activities, ceremonial dances that formed part of marriages and deaths, mimetic dances in perfect imitation of birds and animals, and those that formed an outlet for their physical and emotional exuberance. Since, with most unsophisticated people, to dance is to pray, many of these dances were ritualistic. They danced, forming geometrical patterns of squares and circles or in separate groups; they moved in lines back and forth or in sinuous curves winding in and out. Men and women danced together either facing each other or in separate groups. Even decorative accessories seemed to link the two races together. Beads and bells, shells and silver were as inevitable a part of their costume as it was with ours.



Madhya Bharat tableau portrays a chapter from the State's glorious history

The bells around the ankles and below the knees, as necklaces or as girdles, seemed as indispensable to them as it is to us. Accentuating them all was a striking similarity in the chant that formed part of the musical background. Deep resonant voices chanted the songs, sometimes a single voice with an answering chorus, sometimes the men rendering one line and the women, the other. All the time there were the drums, the gourds and the rattles in different forms and shapes. Inevitable, ever-present and pulsating with life, they linked the dancers each with the other and with the onlookers in an exciting, exalting rhythmic oneness.

Dignity, restraint and a single-minded purposefulness characterised the dance of the American Indians. Strangely enough, perhaps, not so strangely, similar qualities were apparent in the dance of those



Fire works in various parts of the Capital rounded off the day's celebrations

amongst us who resemble them the most. When the blanket-clad and silver-jewelled women from Himachal Pradesh danced their Pangi, or when the men and women from Sikkim performed their ritual Shapdoh, identical qualities of dignity and restraint were obvious. When the Oraons of Chota Nagpur, their white dresses set off with red borders and red feathers, rendered the Jadur or, when the best of them all, the Marias created

Attired in their school colours with distinctive multi-hued banners, children in their hundreds participated in the Republic day procession

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The Information and Broadcasting Ministry's tableau represents the important features of the Five-Year Plan

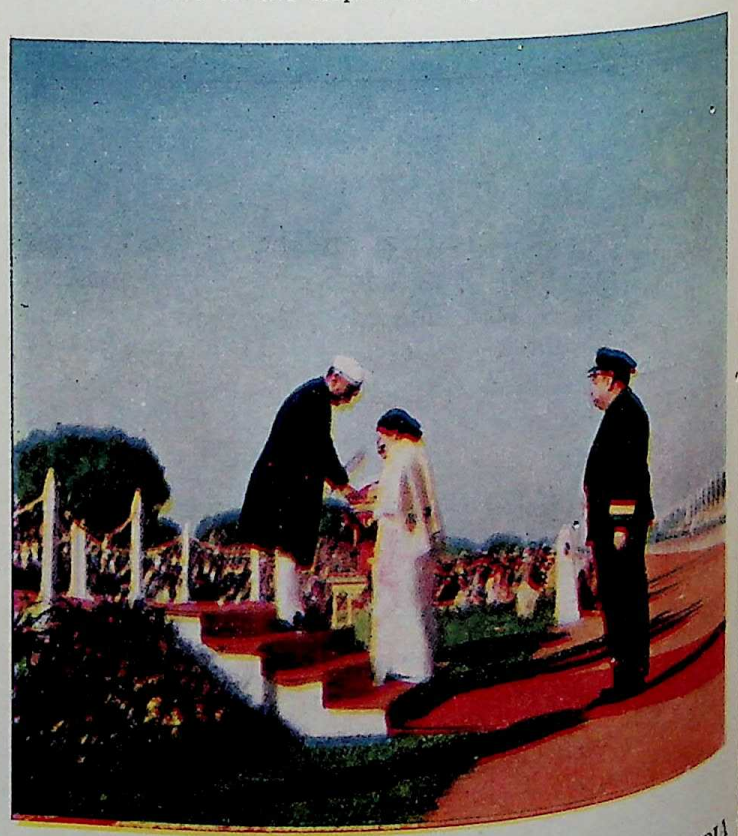
leg and foot patterns with extraordinary precision movements, the resemblance was even greater. These similarities notwithstanding, there were differences which seemed to reach into the fundamentals of the dance. There was an air of gaiety, of abandon about the Indian dances in Delhi which were totally absent in the dance of the Indians in Gallup.

To the Hopi Indian doing his harvest dance, the basket is the sacred container of all good things. The basket, therefore, is propitiated with corn and pollen and even with feathers which, in their decorative scheme, symbolise the flight of the spirit. The pots on the heads of the Zuni women, already referred to, contain the life-giving waters fetched from community well and therefore require careful handling. Seeing them, one wonders if the Garba and the Gummer dancers realise the significance of the perforated pots they carry—the light within reflecting the life within the womb. A hunter's dance amongst them is preceded by a prayer, "forgive me little Brother for taking you alive. I take you only because I need you". Wanton killing for the pleasure of the hunt, therefore, is completely taboo. The close relationship between the hunter and the hunted, the portrayal and the portrayed is established by the exact use of Buffalo head and skin in that dance. It is open to speculation if the Maria dancer, who has a similar headgear had any such motivation to guide him, which may now be forgotten. When the Jemez Indian rigged out in black and white with eagle heads for masks and with elongated black and white feathers set wing-like from shoulder to finger tip, danced now soaring and hovering, now perching and swooping, there was nothing more graceful nor more expressive of the dramatisation of the Eagle, Man and the Higher Powers.

Most of these dances had their prototypes at the Delhi ceremonial but somehow that single-minded motivation seemed to be lacking in many of them. A variety of explanations may be possible for this apparent lack of purpose. It may be that the festive atmosphere of Delhi induced that light-heartedness and dances, which are truly serious, appeared gay and joyous. It may even be that in India "village life throbs with natural gaiety which finds its expression in the folk dance", while the Indian in America, does not as a rule, "dance for the amusement of the people but for the edification of his own soul." The tragic possibility, however, cannot be overlooked that, "to dance for the edification of his own soul" is the true basis of the art in India too, which, for a variety of extraneous reasons, is unfortunately, fast being lost to sight.

Dance was not all at the Pow-Wow at this southern capital of the Indians. They had gathered together to exhibit their wares and to trade with them. Heirlooms and the best of their crafts were always preserved for this occasion. In the hall adjoining the stadium, stall after stall displayed the superb arts and crafts of the American Indian. Exquisite glazed black pottery, the handiwork of well known aritsts, attracted the vast crowds to one section, while in another, excellent Navajo rugs, hand-made and indigenous dyed, with designs reminiscent of our own Patola patterns was the centre of interest. The extraordinary basketry surprisingly beautiful even to those of us who

Mrs R. Jatar, receiving the Ashoka Chakra Class I, awarded posthumously to her husband, the late Captain Jatar of the Air India International's "Kashmir Princess", from the President, Dr. Rajendra Prasad, at a special investiture ceremony held on the Republic Day at Rajpath



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are familiar with basketry in India, fetched fabulous prices. The older and the more closely woven the basket, the greater was its price since it was averred that the best of them could be used as water containers.

Exceptionally beautiful turquoise and silver jewellery attracted women by the hundreds, the prohibitive price, notwithstanding. The traditional symbolic designs such as the snake, the thunderbird, the squash blossom, the rainbow and clouds maintained a repetitive pattern in rug and basketry, in pottery and jewellery.

The sale of these beautiful articles was stimulated by the practical demonstration of workmanship. It is one thing to see the handicrafts of unknown hands displayed in fashionable emporia and another to actually see the craftsman at work each dressed in very attractive, characteristic, regional costumes. A very interesting looking Squaw arrayed in yards and yards of bright coloured silk was weaving a soft rug out of wool procured from her own sheep. Another was weaving an intricate basket out of the fibre from the cactus that grows so abundantly in the Arizona desert. In a corner two serious-faced Navojo Indians were engrossed in their mysterious sand painting. To them sand painting is a ritual and its efficacy in warding off illness and famine is unquestioned. Every line and every colour, therefore, is important and highly significant.

The afternoons during the ceremonial were given to gay Rodeos when superb horsemanship was displayed. There was Bronc busting, lassoing and other competitive equestrienne games, a meagre vestige of the renowned accomplishments made familiar by novel and history of the frontier days. We, with our heritage of excellent horsemanship in Rajasthan, could well include such a display as part of the Republic Day celebrations.

A Chamber of Commerce functioned with utmost efficiency catering to the needs of everyone. Even the camera fan was not forgotten. Special 'pose' sessions of the American Indians in all their splendour were arranged for him and vantage points were provided along the route of the parade from where one could get excellent pictures.

A fitting finale for the Inter-Tribal Ceremonial was a seminar when social scientists, anthropologists, dancers, painters and others met together to discuss every aspect of the life and history of the American Indians. The organisers of the Republic Day celebrations could advantageously adopt some of the features of a ceremonial which has been successfully functioning for over thirty years. Indigenous Displays of arts, crafts and accomplishments in Delhi and every state capital could well make January 26 truly national in character.

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Scientists Meet At Agra

M. S. Krishnan

IT is scarcely necessary at the present time to emphasise the importance of science and technology in the affairs of a nation. Realising this importance a band of pioneers formed an association 43 years ago to afford a forum for the periodical meeting of the scientists of India to discuss problems of interest. The organisation has grown to a large size at present and the annual meetings are attended by more than 2,000 members hailing from all parts of India, in addition to the enlightened local public who evince interest in matters scientific.

The Science Congress has its office in Calcutta, where the majority of the meetings of its Executive Committee are held, but the annual meetings are held at various centres to which the Congress may be invited by the local Universities. In this it follows the pattern of the British Association for Advancement of Science which really inspired its formation and conduct of its affairs. During the last few years the annual sessions were held at Allahabad (1949), Poona (1950), Bangalore (1951), Calcutta (1952), Lucknow (1953), Hyderabad (1954) and Baroda (1955). At the Baroda session the Congress was invited by the University of Agra to hold its 43rd session at Agra which is a centre of learning and a place of historical interest.

The Indian Science Congress has now won a definite place in the advancement of science and the popularisation of science in India. During its annual session, which generally lasts a week, it splits up into

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From left : Delegates from Argentina, Australia and the People's Republic of China

various sections dealing with specific branches of science and these sections discuss scientific papers submitted for reading and also hold symposia on topics of general interest in which, very often, more than one section may take part. In addition, popular lectures are delivered by eminent scientists, generally illustrated by lantern slides or films. The Science Congress session therefore marks an important event every year for the scientists of India for it affords them an opportunity for meeting one another and discussing problems of mutual interest.

The Science Congress is taken advantage of by the various other learned societies in India to hold either their annual general meetings or special meetings. It is almost the only occasion in a year when scientists from various parts of India are able to come together, and this year also, more than a dozen scientific societies held their annual meetings at Agra.

This session was attended by over 60 foreign scientists representing as many as 20 countries. The largest team of scientists came from the U.S.S.R., comprising representatives of most of the major sciences. These foreign delegates had opportunities of giving special lectures during the session and of exchanging views on their specialities with their Indian colleagues. Several of them were enabled, after the session, to visit some universities and other research centres in India.

The opening meeting of the Congress was held on January 2, 1956, in the *pandal* at St. John's College.

In his inaugural speech the Prime Minister appealed to the scientists to think deeply over the consequences of their research activities and to give a lead in right thinking by others. He felt that public men and politicians should also think on correct lines, though he realised that politicians had their limitations. He referred particularly to the necessity of ridding our minds of thoughts which led to hatred and conflict and of exploring ways and means of living in peace and concord with the rest of the world. The President of the Congress in his address dealt with the problems of mineral resources and their development. He showed that there were large areas of the earth's surface which still required detailed examination and that most parts of the world required to be investigated at depth by all the tools available now for

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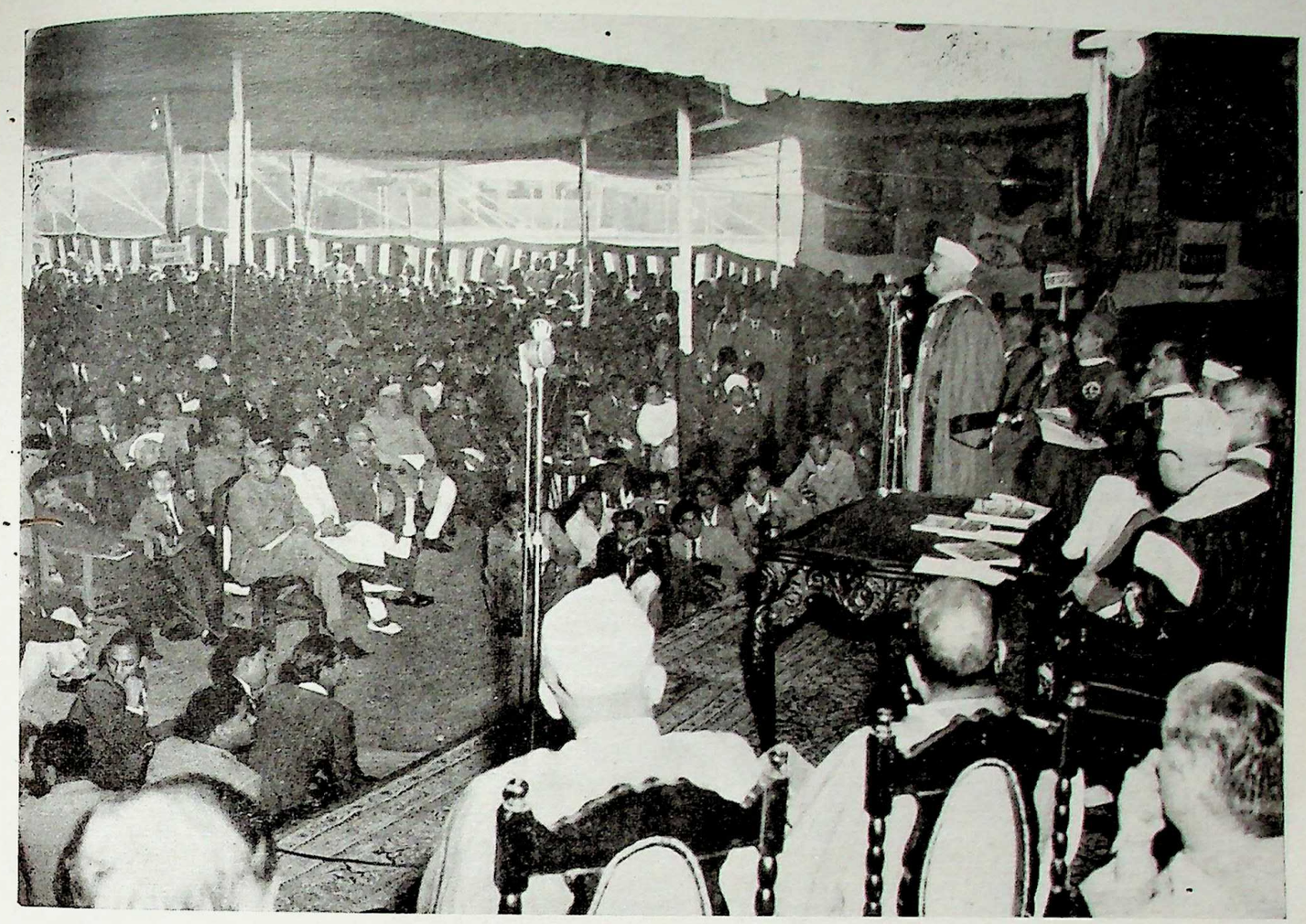

Jawaharlal Nehru inaugurating the session of the Science Congress

prospecting. Because of the very rapid rate of depletion of many of the mineral deposits at present known, it was necessary to find new deposits to take their place and this could be done only by adopting all the latest methods available to science and carrying out systematic work all over the world. The address also dealt with problems of conservation and utilisation of mineral resources particularly as the necessity for conservation was becoming urgent because of the wasting nature of the resources and the increasing tempo of industrialisation of the whole world.

An exhibition of scientific instruments and scientific books was also arranged along with the session. During the last few years Indian enterprise has entered into the field of manufacture of scientific instruments and some precision instruments are already being made here in addition to the ordinary apparatus required for schools and colleges. There was also a meeting of the Association of Scientific Workers of India which was inaugurated by the Prime Minister.

After the opening session the Congress broke up into various sections at which symposia on various subjects were held. In the Physics Section, Dr. B. Peters dealt with cosmic rays, their nature and origin and the uses to which they are being put. The Chemistry Section, which was presided over by Dr. S. H. Zaheer, heard an address relating to the necessity for conserving wood and farm manure and utilising particularly coal; the per capita consumption of energy of under-developed countries like India is only 100 therms compared to over 2000 therms in advanced countries and it would, therefore, be necessary to increase power consumption through industrialisation. The Zoological Section was addressed by its President, Dr. M. L. Bhatia, on the low standards of zoological study and research in our institutions. He advocated the introduction of zoology as a compulsory subject in schools and the establishment of more Natural History museums and Zoological Gardens in the country for educating the people. The Section of Geology was addressed by Shri A. M. N. Ghosh on the structure of the Eastern Himalayas in Sikkim, where interesting folding and thrusting of rock formations have been deciphered. He also referred to some of the mineral resources of the region including coal.

In the Section on Agriculture, Dr. S. B. Rai Chaudhury emphasised the need for a proper and de-

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tailed survey of the soils of India in order to use them for agricultural and other operations. Dr. M. N. Basu, President of the Section of Anthopology and Archaeology, discoursed on the role of museums in the progress of a country and advocated the expansion of activities of the present museums and the establishment of new museums in various parts of the country. In the presidential address to the Engineering Section, Dr. B. N. Dey drew the attention of engineers and scientists to the need for a new outlook to utilise scientific research in the progress of the country. He drew attention to the new knowledge about the atom, solar energy, and other natural sources of energy which ought to be studied carefully and harnessed for the use of man. In the Medical Section, Dr. Subodh Mitra gave an account of the incidence of cancer in India, the nature of the disease and the progress of research in combating cancer.

In the Botany Section, Dr. Sayeeduddin reviewed the progress of Systematic Botany in the country and pointed out the need for greater and more varied systematic work. The Section of Psychology was addressed by Prof. L. J. Bhatt on the scope of Psychology as a science and its function in the practical field. Prof. K. Nagabhushanam, in his address to the Statistics Section, reviewed the study of statistics in this country, especially on the research side and dealt with the aspect called 'Time Series', which found application in several problems such as meteorological and geophysical studies.

In addition to the reading of some papers submitted by members of the various Sections, special lectures were also given in the Sections. A few popular lectures were delivered in the evenings.

Dr. H. J. Bhabha lectured on the Atomic Reactor now being built near Bombay. He said that it would use 'heavy water', for the production of which arrangements are being made at Bhakra Dam. Prof. Mahalanobis lectured on the principles of planning which he wished to be followed in this country, where there is a vast population which did not have enough to do during the greater part of the year. Mr. P. Eveans of the Assam Oil Company gave a lecture on the oil resources of India with particular reference to Assam.

Dr. B. Mukherji of the Central Drug Research Institute of Lucknow gave an illustrated lecture on the characteristics of human skin and its pigmentation. Prof. Powell of Bristol gave an interesting account of the work done by himself and others in Western Europe for the study of the upper atmosphere by sending out balloons containing instruments. According to him, it has been possible to reach heights of about 110,000 feet. The data on the upper atmosphere were of great interest at the present day when jet air-planes could be used for aerial travel and rockets may find use in the near future for probing into inter-planetary space.

The Indian Science Congress has already elected Dr. B. C. Roy, an eminent physician and now the Chief Minister of West Bengal, as the President for the year 1956-57. Prof. M. S. Thacker, Director of Scientific and Industrial Research in the Government of India,

Scientists with the Prime Minister at the 43rd Annual Session of the Indian Science Congress

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From right: Mr R. Lanbo from Scotland, Mr Kwoczynski and Mr J. S. Ekiel from Poland and Indian delegates

has now been elected as the President for 1957-58. The next session of the Congress will be held in January 1957 in Calcutta by which time it is hoped that the Congress will have its own building in that city.

The 43rd Session was as popular as the previous sessions and attracted as many as 2,500 delegates from various parts of India. Over 1,500 local residents also became members for the duration of the Session.

The Science Congress is playing a most important part in the popularisation of science and it is of interest to note that, in the context of the Second Five Year Plan's emphasis on industrialisation, it has a still more important part to play. A large number of its members are active workers in research in Government organisations, in the Universities and in Laboratories of private enterprise. They are, therefore, in close touch with the technological problems which the country has to face for fulfilling the Second Five Year Plan which aims ultimately at the raising of the standard of living of the common man. The Science Congress, therefore, has an even greater role to play in the coming years than in the past.

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They All Came To Delhi

Bhabani Sen Gupta

THE Kings of Saudi Arabia and Nepal, the Presidents of Yugoslavia and Indonesia, the Governor-General of Pakistan, the Secretary General of the United Nations, the Prime Ministers of Egypt, Pakistan, Burma, the Sudan, Cambodia and the Soviet Union, the First Secretary of the Soviet Communist Party, the Deputy Prime Ministers of West Germany, Afghanistan and the Democratic Republic of Viet Nam, the Crown Princes of Saudi Arabia, Laos and Cambodia, the Foreign Ministers of Britain, Australia and Canada, the Chief Justice of the Sudan and a Judge of the U.S. Supreme Court, Government leaders of Liberia and Parliamentarians of Japan, two Vice-Presidents of the Standing Committee of the People's Congress of China and the Chief Minister of the City State of Singapore—they all visited India in the past thirteen months, from January 1955 to January, 1956. This indeed is a distinguished Assembly of statesmen from all the five continents, representing countries with many divergent social and political systems! They came on missions of friendship and goodwill enlarging by their visits the area of peace and amity and forging brotherly ties among nations. More statesmen travelled to India in 1955 than to any other country.

India has no arms to give, no military alliances to offer, no surplus finance to export. She belongs to neither power bloc, nor does she wish to sponsor a third. But she is the peace capital of the world. She has her friendship to give to all and the friendship of

Mr N. A. Bulganin and Mr N. S. Khrushchev with Kashmir artists who gave a performance in their honour at Srinagar

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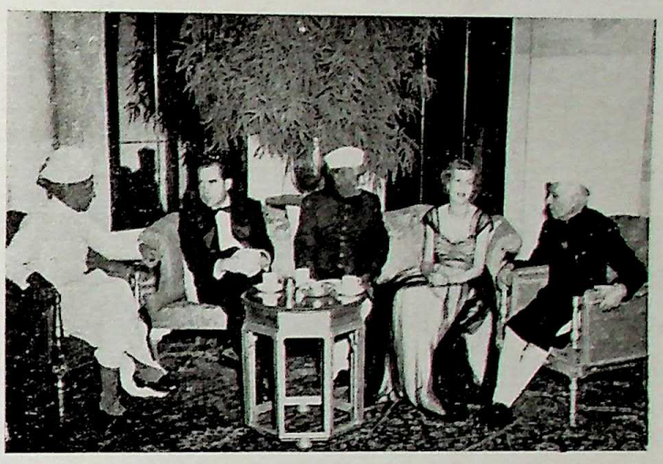
all to take. "India's hand of friendship has always been extended to every country," said the Prime Minister Mr. Nehru, on Independence Day, 1955. "This hand has never been raised against any country and I hope in future also, it will never be raised against anybody."

In this age of nuclear bombs and military pacts, India is not afraid, nor does she wish to be feared. People come to India to seek friendship, to understand and to explain, to learn and to preach. "We welcome association and friendship with all and the flow of thought and ideas of all kinds, but we reserve the right to chose our path." Thus said Mr. Nehru in Madras, at a mammoth public meeting in December to welcome Mr. Bulganin and Mr. Khrushchev.

The visits of leaders from so many countries make India what Britain was a hundred years ago: the receiving centre of all shades of ideas and thoughts. In the healthy atmosphere of a robust democracy, every visitor feels the air of freedom—to speak, to explain, to criticise, to defend. President Tito criticised military alliances when he was in India last year and he was later joined in by Col. Nasser, the King of Saudi Arabia and the Prime Minister of the U.S.S.R. On the other hand, on this soil of India, military alliances were defended by Sir Anthony Eden and Mr. Lester Pearson. Mr. Bulganin blamed the West for the continued division of Germany; Dr. Bluecher, the Deputy Prime Minister of the Federal German Republic, held the Soviet Union responsible for the plight of his country.

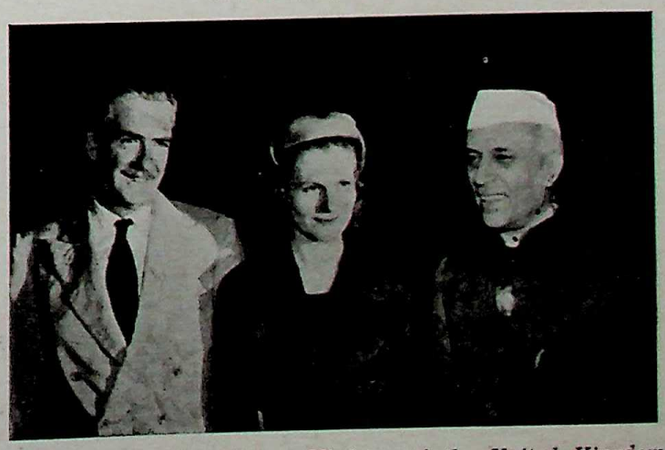
India entered 1955, in the words of the *New York Times*, "in a mood of confident optimism", and with President Tito as a distinguished witness to her confident footsteps along the path of progress. "You are building a new India. We are full of admiration that you have been able to achieve such significant results in such a short time", said the Yugoslav leader while on a visit to the Sindhri Fertilizer Factory, the biggest in Asia. India's ambitious nation-building projects drew the admiration of many world statesmen—the Kings of Saudi Arabia and Nepal, the Vice-President of Indonesia, the Deputy Prime Minister of Egypt and the Prime Minister of the Sudan, and the Soviet leaders, Mr. Bulganin and Mr. Khrushchev. Here was a country devoted to peaceful national reconstruction, largely self-reliant, but anxious to accept friendly assistance and to share whatever she had learnt and built. The Soviet leaders assured her of friendly co-operation in the economic field; the Foreign Minister of Canada, who had come to open a huge dam built in West Bengal with Canadian assistance—under the Colombo Plan, offered more technical and other help on behalf of his Government; the West German Vice-Chancellor explored the scope of larger economic contacts between his country and India. The Burmese Government obtained a generous loan; Cambodia sought technical and other assistance; Singapore and the Sudan asked for Indian experts; and delegations

Mr Dag Hammarskjoeld U.N. Secretary General with Mr Nehru



Mr Richard Nixon, Vice-President of the United States, and Mrs Nixon with the President, Vice-President and Prime Minister of India

Dr Franz Bluecher, Deputy Prime Minister of the Federal Republic of Germany at the banquet given in his honour at the Rashtrapati Bhavan



Sir Anthony Eden, Prime Minister of the United Kingdom and Lady Eden with Mr Nehru

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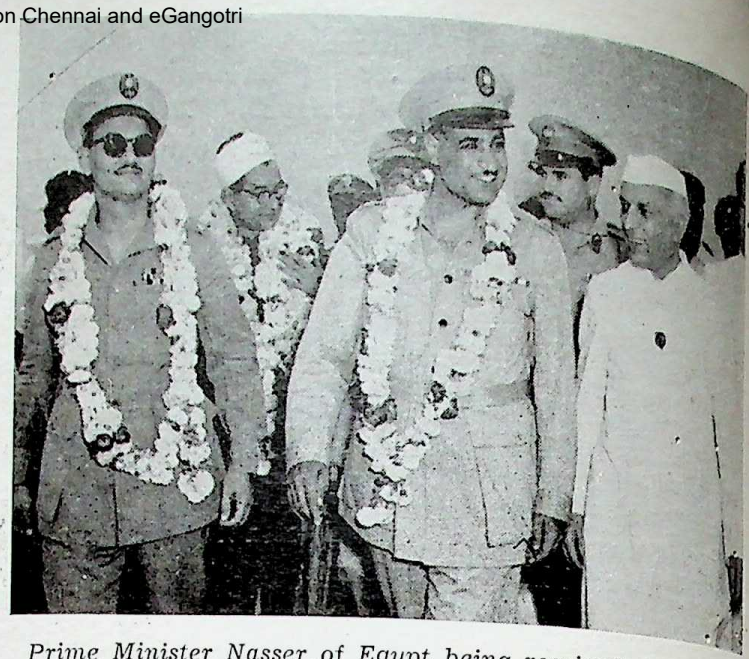
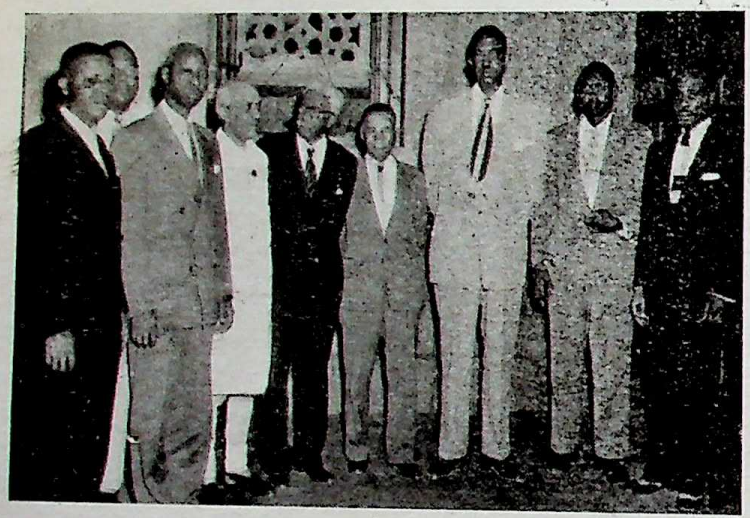
Mr Nehru introducing Shrimati Tarakeshwari Sinha, M.P., to Madame Soong Ching-ling, Vice-Chairman of the Standing Committee of the National People's Congress of China



Prime Minister Nasser of Egypt being received at the airport by Mr Nehru. On left is Major Salah Salem, Minister for National Guidance, Egypt



Members of the Liberian Delegation on their way to Bandung stopped at New Delhi to meet Mr Nehru

came from many countries in Asia and Africa to study India's community development programme.

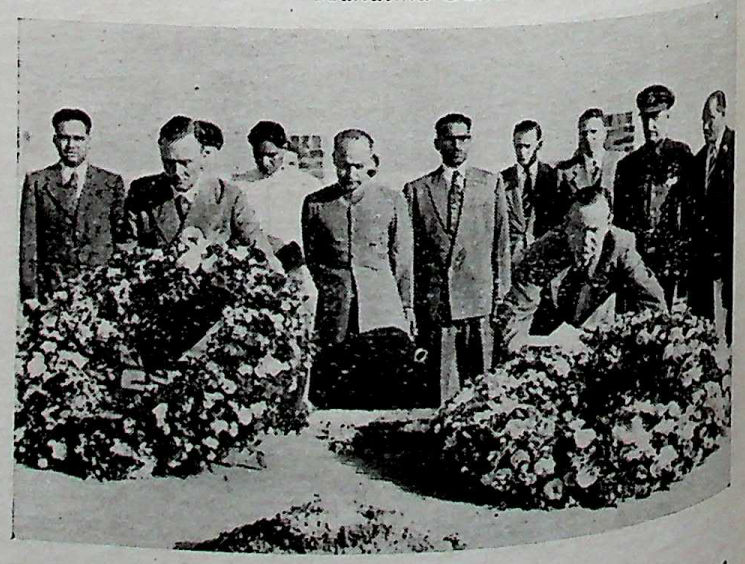
Some came to hear, some to report, others to consult Mr. Nehru on a variety of matters, some to renew contacts lost in the dark corridors of history, to revive and recall a glorious past and to forge links with a brave new future. In the early hours of Wednesday, July 19, President Soekarno halted for a while at Palam, Delhi's international airport, and was visited by Mr. Nehru, just back from his European tour. The visit of the Egyptian Prime Minister in April and of the King of Saudi Arabia in November, revived India's ancient contacts with the civilisation of the Arab world. Only a few days before the visit of Col. Nasser, India had signed a Treaty of Friendship with Egypt.

This revival of the friendly contacts of two ancient civilisations was in the mind of the Egyptian leader when he spoke to the members of Parliament in New Delhi. "India and Egypt have once been the builders of great civilisations. We both have given to the world a great deal of knowledge, wisdom and love. It is time now to continue what we have begun. The torch has never fallen from the hands of our ancestors and it is our duty now towards our people and the generations to come to make them illumine more to enlighten the way not only to our nations, but to all peoples, whatever their race, religion and culture."

King Saud who commands the universal respect

King Saud of Saudi Arabia being offered gifts and greetings by citizens of Bombay

Mr L. B. Pearson, Secretary of State for External Affairs of Canada, laying a floral wreath on the Samadhi of Mahatma Gandhi



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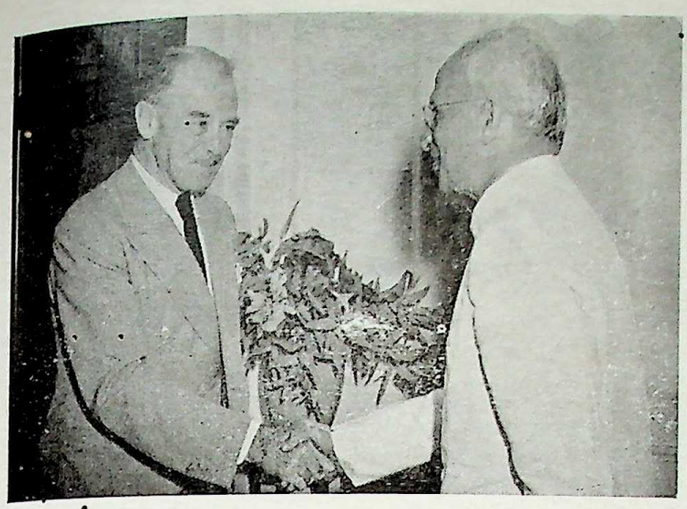


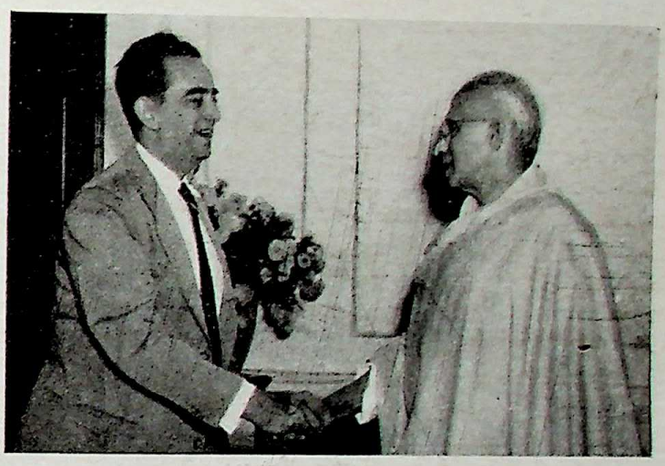
Dr S. Radhakrishnan greeting Mr R. G. Casey, Minister of External Affairs of Australia

Mr Ghulam Mohammed, the then Governor-General of Pakistan, with President Dr Rajendra Prasad during 1955 Republic Day celebrations

of Muslims all over the world, paid a handsome tribute to "this Indian policy of equality and equity", towards the national minorities. "I desire to say to my Muslim brethren all over the world with satisfaction that the fate of Indian Muslims is in safe hands."

The Prime Minister of Burma, Mr. Nu came to meet Mr. Nehru on his way to Europe; as did the Australian Minister of External Affairs, Mr. Casey. At the dawn of the New Year, the U.N. Secretary General, Mr. Hammarskjoeld stopped in New Delhi on his way to Peking and had "very useful talks" with Mr. Nehru. Soon after his mission to Peking, Mr. Krishna Menon was invited by the Chinese Government for consultations. That was in May and a couple of months later a hopeful chapter of direct contacts opened between the United States and the Chinese People's Republic.

The Chief Minister of Singapore, Mr. David Marshall, came towards the end of the year on his way to London to press his people's demand for independence. "I have come on a pilgrimage to this land of Gandhi and Nehru", he said. "To us who live far away, India had been a midwife of the rebirth of Asian freedom. I want to



Mr. David Marshall, Chief Minister of Singapore being greeted by Dr Radhakrishnan

sit at Mr. Nehru's feet to learn as much as I can and to absorb as much as I can." He left Delhi assured of India's sympathy for Singapore's constitutional advance and aspirations. The Sudan Prime Minister, Mr. Ismail-El-Azhari said after a visit to the giant

(*Continued on page* 57)

Prince Norodom Sihanouk Varman of Cambodia at Sanchi

Dr Soekarno, President of the Republic of Indonesia with Mr. Nehru

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*Cultural Outposts of India—II**

H. D. Sankalia

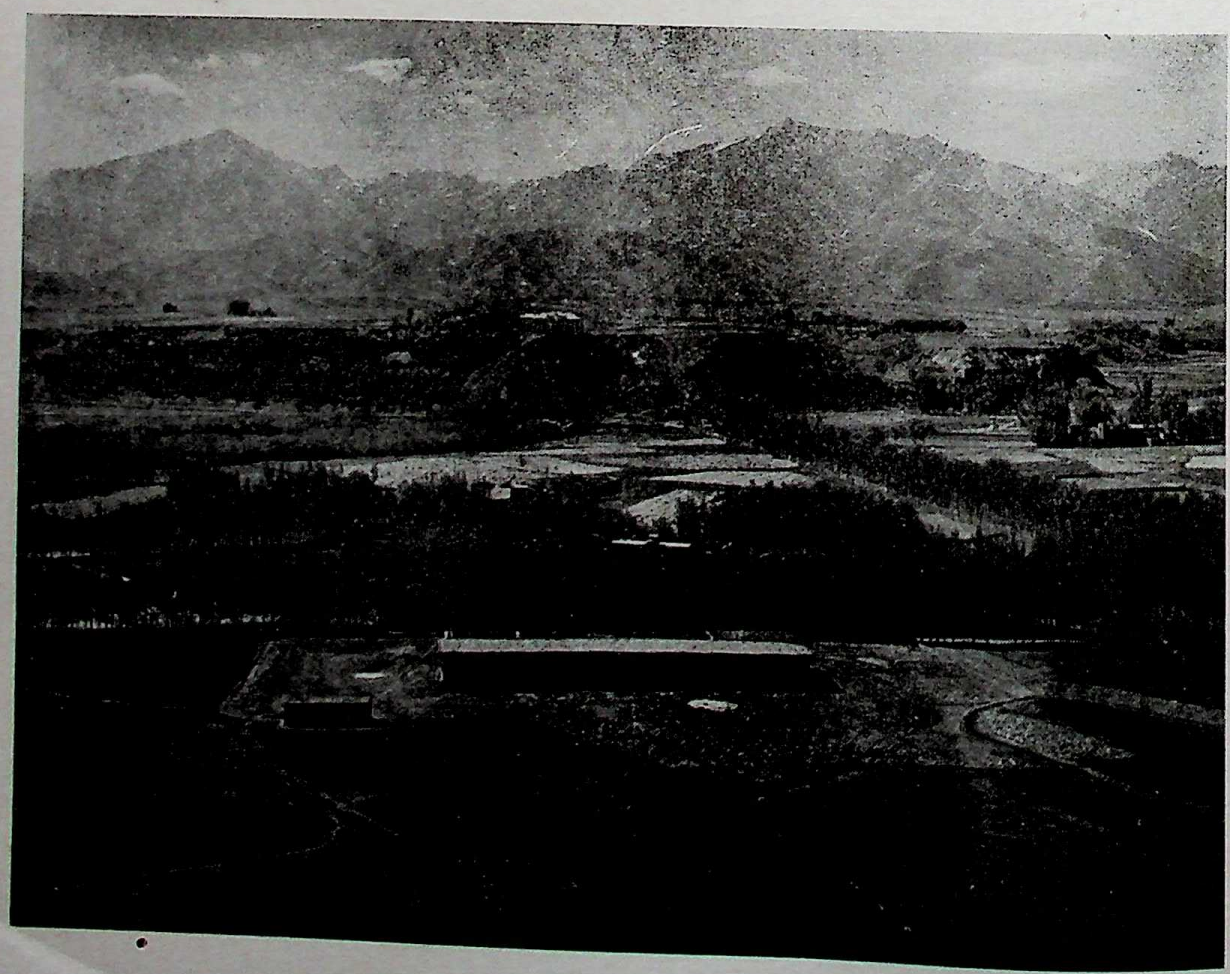
PERHAPS it is difficult to believe that about two thousand years ago the countries of Afghanistan and Central Asia were permeated with Indian culture through and through.

It is, however, a fact and can be ascertained if one sees some of the relics, remains of beautiful paintings on silk, and tablets containing official orders in the Central Asian Antiquities' Museum at New Delhi, and in the British Museum in London. Further proof can be had by glancing through the sumptuously illustrated volumes of *Inner Asia* by Sir Aurel Stein.

Afghanistan was once a part of India. Gandhari, the mother of the Kauravas, was from Gandhar, i.e., modern Kandahar. Likewise, the river Kabul, on which stands the capital of Afghanistan, was called Kubha in the Rigveda and the valley of the Swat as Suvastu. Afghanistan and the North-West Provinces retain many ancient geographical names even today. Further, the language of the region, viz., Pushto, belongs to the Aryan family of languages and not to the Semitic.

Bodhisattava painting on silk banner from Tung-Hong (7-10th century A.D.)

* *Adapted from a broadcast talk from All India Radio*



The village of Bamian —an ancient Buddhist centre

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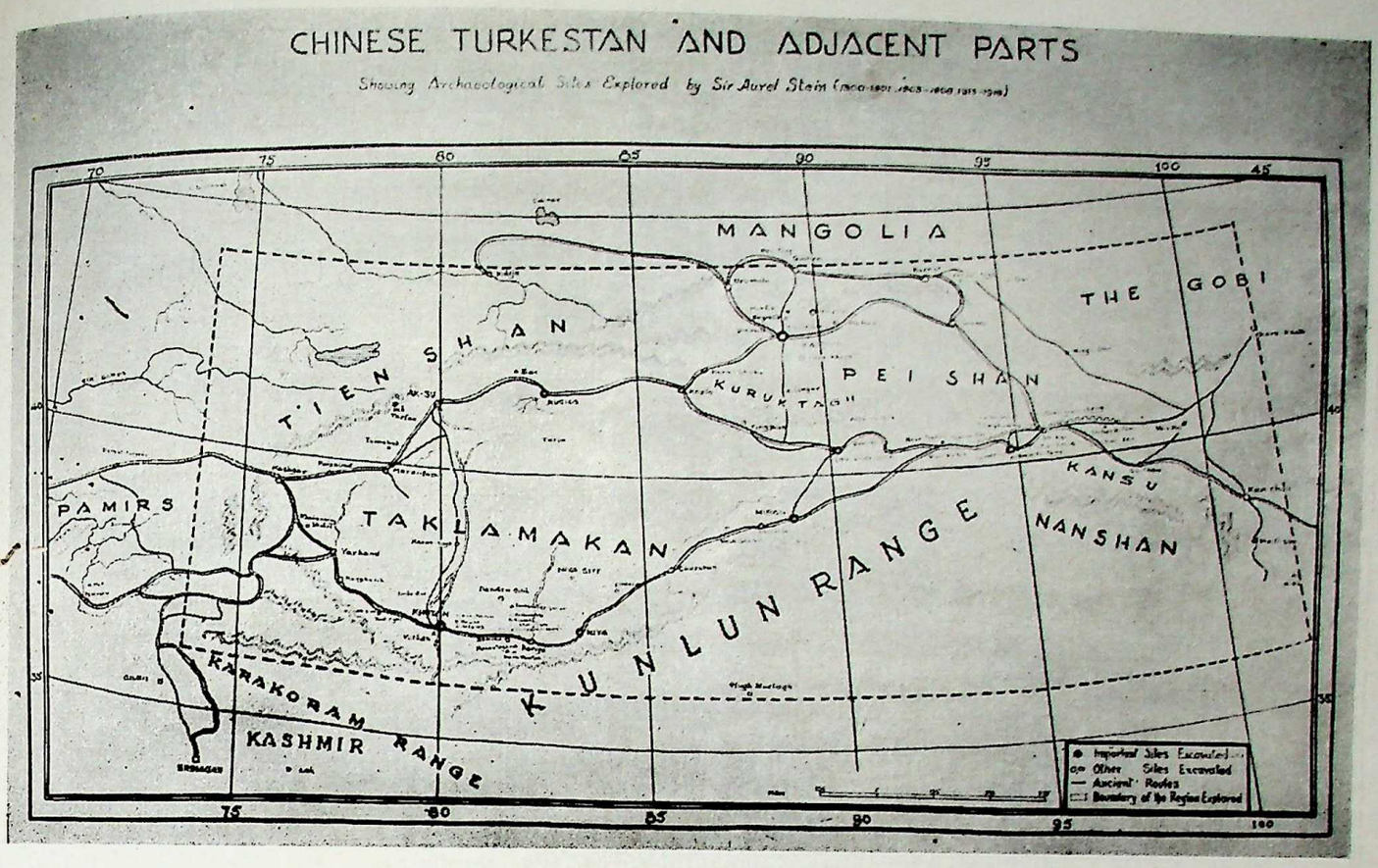

It was probably because of these reasons that since the third century B.C., foreign geographers and travellers, viz., Graeco-Roman, the Chinese and even the 10th century Arab historian Al-Beruni regarded Afghanistan as a part of India.

Central Asia, formerly called Chinese Turkestan and now a part of China and known as Sinkiang, stands in a different position. It was not a part of India, but in course of time became an extensive colony of India.

Central Asia is a vast territory, about 900 miles from east to west and 300 miles from north to south. On its north are the mighty Tien Shan mountains. On the south the Kun Lun range separates it from the Tibetan plateau. On the east are the Nan Shan mountains and on the west the Pamirs.

This vast valley is almost entirely occupied by a desert called the Takla Makan. However, there is some vegetation along the southern foot-hills and along the Yarkand and the Tarim rivers which flow in the north. Ordinarily, nobody would have thought of colonising this, otherwise inhospitable land, but it lies on the road to China from Western Asia and India.

So from remote antiquity caravans have been traversing it, carrying principally silk from China to Rome and India, and returning with Indian and Western things in exchange. Indians, first seem to have entered this region, when Asoka began to spread the message of the Buddha, outside India. It is the Buddhist pilgrims, particularly the Chinese, who have left very detailed records of their tour to India and back to China.

These records enable us to re-construct the ancient routes from Afghanistan to China through Central Asia and tell us some details about the colonies which

Colossal Buddha from Bamian (4-5th century A.D.)

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Bodhisattava head from Ming-oi (1-8th century A.D.)

were situated on these routes. If we start our journey from India, we enter Afghanistan either through Peshawar (the ancient Purushapur), or via Kandahar. It may be mentioned incidentally that Kandahar and Kabul were regarded as the twin gateways of India by Abul Fazal in the 17th century.

From Afghanistan we proceed towards the foothills of the Hindukush. Then crossing the high Himalayas we arrive at Balkh (the ancient Bactra). From Balkh two important routes lead to the Tarim basin which constitutes the heart of Central Asia. Kashgar was one of the important gateways to Central Asia. From here a northern and a southern route led to China.

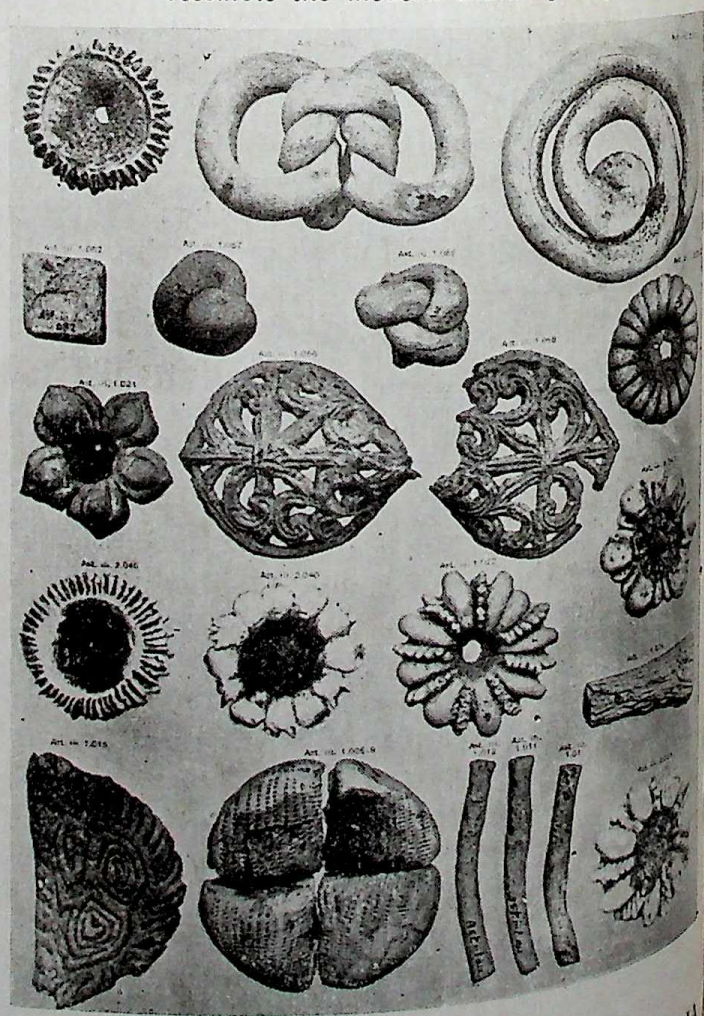
These routes and the important places along them would have been merely names to us had not the English and French archaeologists identified a few of these places and re-traced the ancient routes followed by Fa-Hien, Hiuen-Tsang and other travellers over 1500 years ago. Later Sir Aurel Stein and others undertook the hazardous exploration in Central Asia.

These explorations have provided indisputable archaeological evidence about the once-flourishing Indian culture in Afghanistan as well as in Central Asia. Our knowledge of these regions thus rests on contemporary Chinese records and archaeological evidence, such as coins, wooden and leather Brahmi clay and Kharoshti tablets, manuscripts, innumerable stupas, sculptures and paintings on silk.

Afghanistan, before the advent of Islam, had not only Indian place names, like Kapisha, Purushapura, Pushkalavati, etc., but the rulers were also Indian. They followed Indian administrative system as can be gathered from the names of officers. The Indian influence was, however, much more visible in the customs, manners and the language of the people, who, as the Chinese travellers testify were identical with those of India proper. These are, however, intangible things and are preserved no longer. But the archaeological remains which have been unearthed in several parts of Afghanistan, particularly at Bamian, west of Kabul, at Hadda and Begram leave no doubt about the once-flourishing conditions of Indian religions—Hinduism as well as Buddhism.

At Hadda, which was visited both by Fa-Hien and Hiuen-Tsang in the 4th and 7th centuries respectively, have been found ruins of 531 stupas and 500 sculptures. At Bamian, which commands one of the most important passes to Western and Central Asia, one can even today see numerous caves hewn out in the hills as at Karla and Junnar near Poona. These contain gigantic images of the Buddha as well as wall paintings as at Ajanta. When Hiuen-Tsang passed through it, he noticed numerous monasteries with several thousands of monks residing at Bamian. The king was also a Buddhist and he performed a five-year festival like King Harsha of Kanauj.

Pastry from Astana (6-8th century A.D.). Some of the items resemble the modern Indian pastry



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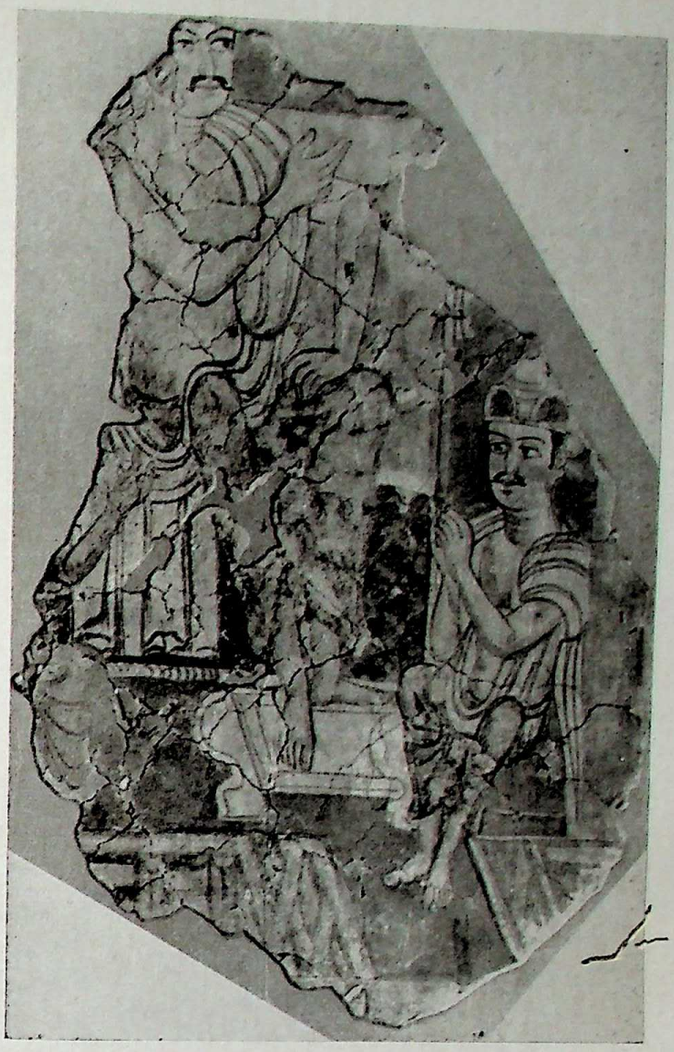
At Begram, which is the site of ancient Kapisha, north of Kabul, French Archaeological Mission found some of the most beautiful ivory statues. These are comparable in their artistic skill with the red stone statues of Yakshis carved at Mathura in the second century A.D. Traces of Hinduism have also been found. Only very recently an image of Surya (Sun) and the remains of a temple in the Gupta style have been found near Kabul.

Central Asia, encompassing a territory as large as Poona to Delhi, had a number of colonies. These had grown up around the oasis on the outskirts of the desert. A few of these can be mentioned and only one or two described here in some detail. On the northern route leaving Kashgar, there were Bharuka, Kuchi and Agnidesa; on the southern Yarkand, Khotan, Niya Bazar and Lou-lan.

Of these, Kuchi in the north and Khotan in the south seem to be important and hence well-known. Kuchi was a flourishing city with magnificent buildings. These included numerous stupas and temples, both of which were gorgeously decorated in gold and inlay. The gateway to the city was flanked by two standing images of the Buddha, each 90 feet in height. The king and the members of his family were Buddhists and bore Indian names like Suvarnapushpa, Haripushpa. Some of the king's daughters had become nuns.

Paper painting from Tun Huang (7-10th century A.D.)



Wall-painting from Miran (3-4th century A.D.)

The citizens learnt the Sanskrit alphabet by copying it on the clay and wooden tablets, just as children do today on slate with chalk. Numerous such tablets have been found. Not only Sanskrit alphabet, but Sanskrit literature, including works on grammar, astronomy, medicine, drama and music, were studied and practised.

And it is specially noted by Hiuen-Tsang that Indian musicians had settled in Kuchi. The dry sand has fortunately preserved a number of manuscripts of such compositions. Of these, the Bower manuscripts found near Kuchi are well-known, whereas some dramas of Asvaghosa which are not available in India, are indeed priceless finds.

Khotan was discovered exactly 50 years ago, when Sir Aurel Stein saw it, its ruins, viharas, dwelling houses and gardens were buried deep in sand. His hurried excavations, in biting cold, brought to light most astounding evidence about the origin and history of the culture that once flourished in Buddhist Khotan. Not only did he find ruins of houses and viharas, sculptures and paintings, artistic pieces of wooden furniture, but varied official, private and religious documents on clay, wood, paper and leather written in the Kharoshti and Brahmi scripts.

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Kharoshti wooden document from Niya (1-3rd century A.D.)

The Kharoshti 'papers', to use a modern name, established beyond doubt the truth about the antiquity of the name 'Khotan' and of the tradition that Khotan was colonised by the immigrants from the North-West provinces of India. The contents of these documents are still more remarkable. We meet with official designations like *Raja Dvara Purasthita* (President of the royal court of justice), *Dibira* (*Clerk*), *Deva Manushya Sampujita* (Dear to gods and men). Most interesting is the existence of an official terminology, for the various classes of stationery represented. The wedge-shaped tablets are *Kila-Mudra* (sealed wedges or packets); files with handles as 'Takhats' whereas ablong tablets with envelops were called 'Lihitaka' or 'letter'.

Owing to the comparatively humid climate of India, no such actual specimens of various types of documents have been preserved in India. For knowledge of these, India is indebted to her far-flung colony and its dry sand. Other objects show that Khotan, though it received powerful influences from China and the Roman world, played an important role in transmitting Buddhism to China.

Of its Buddhist establishments, the most famous was Gomati Vihara, which took 80 years to build. Its Hall of Buddha was of utmost magnificence and beauty, decorated as it was with beams, pillars, venetian doors and windows, all of which were overlaid with gold leaf. This also seems to be a fact, as Aurel Stein found a huge Buddha image, whose knee was covered with gold leaf.

The story of Indian cultural expansion in Central Asia is a story of daring adventure, backed by immense faith and religious zeal. Both these were tempered with a broad-mindedness unique in the history of such cultural missions. None of the Chinese pilgrims has recorded an instance of cruelty or compulsion on the inhabitants. From what they relate either of a Turkish Chief or a king of Kuchi, it appears that true, inner conversion of the spirit was aimed at, and no distinctions of caste, creed or race were made. This cultural activity lasted for nearly a thousand years. It ceased when India lost its own vitality, owing to internal strife and divisions. And before Islam reached Khotan, sand and silt from the desert had already covered the Indian colonies.

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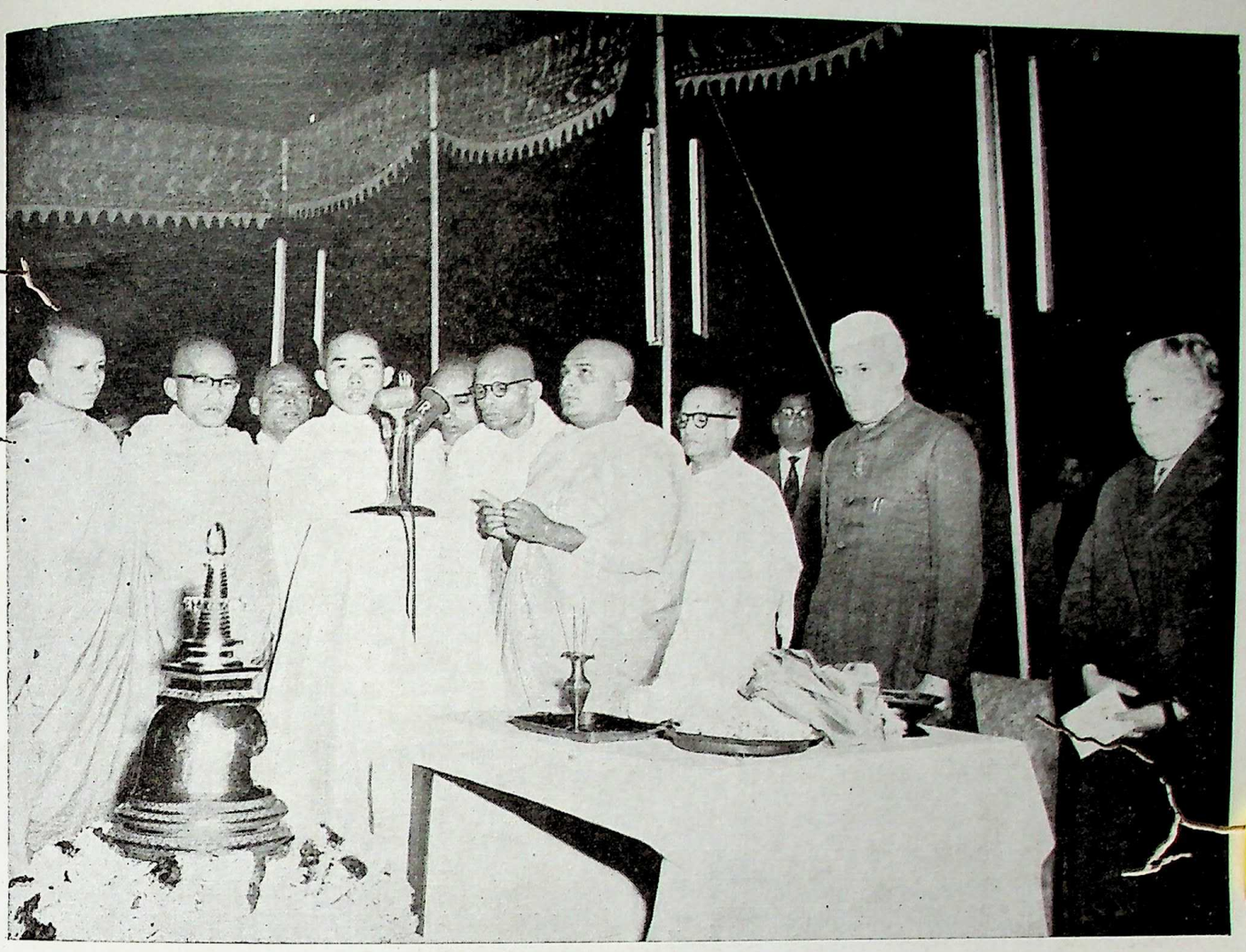

At a solemn ceremony at New Delhi Prime Minister Nehru received the sacred relics of Buddhist Saints brought from London by Madame Pandit and handed them to the Mahabodhi Society of India

Round the Feet of Lord Buddha (ii)

S. Dutt

SARIPUTTA and Mogallana were among the earliest of the Buddha's disciples; in the following year of his ministry, he ordained Ananda.

Ananda, the Faithful Attendant

Within the group of disciples, Ananda held a special position: in the legends, he is seen constantly at his elbow,—bearing important tidings, admitting and introducing visitors, regulating the day's routine, acting generally in all matters in a secretarial capacity. His attachment to the Master was a personal bond, expressed mostly in attendance upon and personal service to him. Admirably efficient that way, he also acted as instructor to the novices and gave occasional discourses in monks' assemblies, some of which are reported in the canon.

Over his antecedents and personal history, there is a veil, but the legends are replete with instances of his devoted service to the Master and of the intimacy of his relationship to him well over four decades. The legends relate how the Buddha used to unburden himself of his inner feelings to Ananda, whispered to him the reminiscences of his past life and of the beautiful spots he had visited and his many contacts with people of all sorts. Ananda seems to have enjoyed his confidence more than any other of his disciples.

The final and most trying ordeal of his devotion

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was when he accompanied the Buddha on his last tour, described in the *Mahaparinibana Sutta*. The party had started from Rajagriha. The Buddha was perhaps anxious to leave, because a 'war fever' was then on at this capital of Magadha where the king was making preparations to launch an attack on an unfriendly neighbouring tribe called the *Vijjis*. The Buddha's own sympathies seem to have been with the *Vijjis*.

He himself was hardly physically fit for the hardships of a long pedestrian tour. "I have grown old and full of years," the Buddha is reported to have told Ananda half-way through this tour, "I have reached my sum of days: I am turning eighty years of age". And then he described in his characteristic half-humorous style his physical condition thus: "Just as a worn-out cart, Ananda, can only with much additional care be made to move along, so methinks my body can only be kept going with much additional care. Save when I remain plunged in meditation of heart which is concerned with no material object, my body is never at ease".

It fell to Ananda to render this 'additional care' to the octogenerian Master, and, to increase Ananda's burden of anxiety, he fell ill twice on this tour,—the second illness proving fatal.

While sojourning at a village named Beluva to observe the 'rain-retreat'—the custom of suspending wandering and taking temporary shelter during the three months of monsoon rains, as followed by all sects of wandering religious mendicants,—'there fell upon him', in the words of the legend, 'a dire sickness, and sharp pains came upon him even unto death'.

From this attack of illness, however, the Buddha rallied, but it was felt by everybody round him that his end could not be far off. What especially exercised the minds of the chief disciples was that he had left no instructions regarding the organisation and succession to the headship of the monastic Order, the *Sangha*, after his decease, and Ananda, as their spokesman, approached the Buddha trying tactfully to draw him out on the question. "I have seen the Lord", said Ananda to him, "in health and also in illness. And though at the sight of your sickness, Lord, my body becomes weak as a creeper and the horizon dim to me, yet I have always taken comfort from the thought that the Lord will not pass away from existence until at least he has left instructions touching on the Order (*Sangha*)".

Strange, but epoch-making in its consequence, was the Buddha's reaction to this speech and his handling on this occasion of the question. Refusing emphatically to set down any laws and regulations of his own making for *Sangha* and disowning his own leadership of or authority over that body, he enjoined that each must be a 'lamp unto himself'; that within the *Sangha* there must be no dependence on outside rule or authority, but that each member shall act on his own sense and understanding of the *Dhamma* (Principle of Right-doing).

This was the Buddha's democratic and individualistic solution of an issue, ever-present in the organisation of human group-life, that has assumed such prodigious proportions in today's contending political ideologies.

The Buddha's affirmation of the principle of freedom for the individual, so extremely enunciated, became the *magna carta* of Buddhist monastic organisation. In it no place was left for a dictator,—no abbot or recognised authority in matters of faith and creed, —and in the corporate life of a monastery all stood on an equal footing.

In the constitution it evolved there was the 'direct democracy' of an ancient Greek city-state,—a system of deciding all matters by free discussion and open ballot-voting. So extremely individualistic indeed was the outlook of the Buddhist *Sangha* that it allowed to every member the right, no other monastic community has ever allowed in history, of initiating a schism, with the historical result that sectarian divisions in Buddhism abound.*

But to resume the story of the tour. At the last halting place, a village named Pava, the Buddha with his following was entertained by a lay devotee, Cunda, who was of a somewhat low caste, a *Kumaraputta* (worker in clay). It so happened that he served at the communal meal a course which was thought perhaps to be a delicacy named *Sukara-maddhava*. The name has been variously interpreted,—'dried boar's flesh', a kind of edible root called in England 'pig's joy' according to Mrs. Rhys Davids, and young shoots of the sandal-wood tree, as a Chinese scholar has suggested. Whatever it was, at the meal the Buddha partook of it himself, perhaps not to hurt the host's susceptibilities, while prohibiting it to the others.

From the canonical account it seems that the followers went back from this stage of the journey, —only the ever-faithful Ananda was left to look after the Master.

It was the last lap of the tour and the two went their way towards the town of Kusinara, nearly twenty miles off, through the countryside, lonely and deserted after the harvesting of autumn. The last meal had induced a severe attack of dysentery, but, oppressed with thirst and enfeebled by illness, the Buddha had to trudge on, tenderly supported by Ananda, till

* See S. Dutt's *Early Buddhist Monachism* (Trubner's Oriental Series, 1924), Chapters VI and VII.

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his strength gave out on the outskirts of the town. Pointing to a grove that stood a little way off, he asked Ananda to lay him between two *Sala* trees. Here, with the sole attendant Ananda leaning over his moribund body and watching in an ecstasy of heart-break the ebbing away of life, the Master passed away into that ultimate state of peace,—into the 'Great Decease', termed *Maha-parinibbana.*

This is the last moving glimpse we have of Ananda in the legends, except for one other occasion. Shortly after the 'Great Decease', a general convention of monks from all over the country was called at Rajagriha by a pre-eminent leader of the community, Maha-Kassapa, with the object of casting in the form of a canon the dispersed teachings of the Master.

To this assembly Ananda was summoned to reproduce from memory his own recollections, as it was felt that, having stood so near and so long by the Master, he was in the best position to convey the Master's teachings with the greatest exactitude and authenticity. It is said that he reproduced the most important of the Buddha's discourses, in the setting of the time and the occasion, prefacing each discourse with the formula: "Thus have I heard' (*Evam me srutam*).

Sariputta, Moggallana and Ananda were monks who had already forsaken the world and been ordained by the Buddha. But there were many in his train who were not world-forsakers, but just lay devotees,—among them was the renowned physician Jivaka.

The story of his birth and breeding, as told in the legends, is an extraordinary one. He was of illegitimate birth, born of a courtesan of the city of Rajagriha, left by night in a dustbin as an unwanted child shortly after his delivery.

This deserted child was discovered by a crowd of passers-by next morning and among the crowd there happened to be a prince of the royal house. He took pity on the foundling, took him to his house and brought him up with care and affection till the babe in course of years grew up into a fine strapping lad.

The prince then sent him away for education, to far-off Takkasila, a cosmopolitan university town and centre of learning in that age, flourishing on the Indian frontier near modern Peshawar. Here Jivaka specialised in medicine and surgery and on return to Rajagriha set up practice there. His rise in the profession was meteoric and a few miraculous cures he carried out brought him wealth and immediate reputation in the city. At the time when the Buddha had started on his ministrations in Magadha, he was the busiest and most sought-after physician in the capital.

The Buddha made many sojourns during his missionary career at the Magadhan capital. Jivaka came in contact with him, both in his professional capacity and as an ardent admirer and later on a staunch devotee. His professional services were always at the disposal of the *Sangha* and any monk who fell ill had free treatment at his hands.

In an extensive mango-orchard by the city-wall of Rajagriha, he built and dedicated to the *Sangha* a large group of monasteries. Its site has been partially excavated by the Archaeological Department of the Government of India in the current year, unearthing up to date two large assembly halls and a great elliptical structure of stone. This *Jivaka-Amravana* renowned in the legends, became the venue of many important monkish assemblies convened at Rajagriha.

In one of his discourses, the Buddha characterised Jivaka as 'the most popular man' among his lay devotees. He made it a point to attend all the sermons of the Master given at Rajagriha snatching time from his crowded professional engagements and at times holding discussions with the Buddha on points of faith and doctrine, of which one is reported in the canon.

Ambapali—the Courtesan of Vaishali

But the strangest and most fascinating figure in the circle of the Buddha's disciples and devotees was the woman Ambapali. She is related in the legends to the picture of the city life of that age.

The most populated and prosperous region of the country, way back twentyfive centuries, was the fertile Gangetic plain in the north. Here had sprung up a number of thriving cities and towns, of which the legends list six most famous,—Champa, Rajagriha, Savatthi, Saketa Kosambi and Banaras,—seats of a primitive civilisation, care-free and gay and sensuous, that proclaimed itself, as the legends tell, in their 'Ten Cries', namely, "the noises of elephants and of horses and of chariots; the sounds of the drum and of the tabor and of the lute; the sounds of singing and of cymbals and of gongs and, lastly, the cry, 'Eat, drink and be merry' ".

An intriguing feature of this gay, sensuous city life of the age was an institution recalling the *Hetairai* of ancient Greece. We are told in the legends that in those times there was a practice to officially instal a courtesan, excelling in feminine allure, to serve as the centre of the city's gaieties and entertainments. In the city of Vaishali, Ambapali was such a 'city-courtesan'.

The legends relate her charms. "Beautiful, graceful, pleasant, gifted with the highest beauty of complexion, well-versed in singing, dancing and lute-playing, much visited by amorous citizens", she used

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to charge fifty *kahapanas* (current silver coins) for one night's entertainment.

A certain merchant of the Magadhan capital Rajagriha who had been to Vaishali on a tour of business and had seen with his own eyes Ambapali's great influence in that city, is said to have, on his return, approached the Magadhan king for permission to instal a 'city-courtesan' at Rajagriha. The royal assent having been obtained, one Salavati was chosen to be Ambapali's counterpart in that city. The physician Jivaka, it is said, was the child of this woman's womb.

The legends are silent as to how Ambapali came to be a devotee of the Buddha, but she evidently became a great favourite. Behind the infamy of her profession, the Master had seen perhaps her exceptional intelligence, her earnest and yearning devotion, her uncommon qualities of head and heart. Being the Buddha's favourite, she must have often been thrown into the company of his monk-disciples.

In an ancient monkish anthology, entitled *Theragatha*, there occurs a couple of verses on the fatal allurement of feminine beauty, which the canonical commentator ascribes to Ananda as having been composed by him to put on guard monks who were apt, as it is said, to lose their heads at the sight of Ambapali's exquisite beauty.

A woman of much wealth and influence, she lived in a fine mansion at Vaishali. From her name, 'Mango-grower', it is supposed that she also owned extensive mango-orchards. The Chinese pilgrim, Yuan Chawng, visiting Vaishali a millenium later, round 635 A. D., mentions mango and banana as plentiful and much prized there.

To Vaishali the Buddha came with his large party of followers in the course of that last missionary tour already described. The citizens, eager to do honour to him, approached the Buddha and pressed him to accept their hospitality. But Ambapali had forestalled them. "I have already promised to dine with Ambapali", —the Buddha told the scandalised headmen who waited in deputation on him on this occasion. They argued and pressed him to cancel the engagement, but the Buddha was firm.

"And the Blessed One" (to quote the words of the legend) "robed himself early in the morning and went with his company of followers to the place where Ambapali's dwelling was. When he had come there, he seated himself on the seat prepared for him. And Ambapali the courtesan set the sweet rice and the cakes before them and she waited upon them till they refused any more.

And when the Blessed One had quite finished his meal, the courtesan had a low stool brought and sat down at his side and addressed the Blessed One and said: 'Lord, I present this mansion to the Order of Mendicants, of which the Buddha is the chief'. And the Blessed One accepted the gift, and, after instructing and rousing and inciting and gladdening her with religious discourse, he rose from the seat and departed thence".

How it recalls Mary Magdalene 'breaking the rich vase of alabastor one of her seven lovers had given her and pouring the odorous perfume on the tired dusty feet of Jesus Christ'!*

Ambapali here drops out of the canonical legend; we are left only to imagine that, after this last meeting with her Lord, she gave up her mansion and retired into privacy and her after-years were redolent with cherished memories of her unforgetable hours at the Lord's feet. Old age came upon her, a thief in the night, as it does on the most glamorous of women.

There is a late legend relating to her last years. She had, according to this legend, a son who became a monk and was a preacher of great eloquence. On one occasion Ambapali happened to be among his audience and the sermon she heard from her son's lips so worked upon her mind that she straightaway became a nun.

A short poem, traditionally ascribed to Ambapali, occurs in an ancient collection of 'Verses by Elderly Nuns' (*Therigatha*) which stands by its theme and purport somewhat apart from the rest. It has the same motive as the famous French mediaeval poem by Francois Villon on the 'Fair Amouresses'.

Ambapali, seated before a mirror, contemplates her aged body, 'once a shield of burnished gold', but 'now covered over with a network of wrinkles'. But her 'complaint', unlike that of Villon's women, runs to a different mood: she realises in a flash the impermanence and perishability of all mortal things. Thus, spiritually enlightened, she dies on Arhat,—'one arrived at the summit of spiritual experience'.

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* For comparative study between Mary Magdalene and Ambapali, see vol. VII No. 1, p. 34, *March of India*.

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sometimes had elaborate embroidery in white cotton or silk on it. The famous *palladar topi* of Lucknow belongs to this category. This black felt cap came in as a sort of a compromise between the round cotton cap which sat very elegantly on an Indian head when one was dressed all in white, and the European bowler or felt hat. It is likely that cheap Italian felt caps of this type made it popular.

Muslims also very largely adopted the Fez cap in imitation of the Turks. But this Fez cap of the Indian Muslim lacked the vivid red of the Turkish Fez, and was not so high as the *Tarboosh* of Egypt and other Arab countries. A rather short Fez in a kind of dark red with a black silk tassel at the top was at one time the rage among Indian Muslims, some 30 to 40 years ago. But the fact that the Turks themselves discarded it has made it a little unpopular in India. So the white Indian cotton cap, the felt imitation Turkish Fez and the European bowler hat, all these combined to give the black felt cap to Hindu Indians outside Bengal, Orissa and Assam at the present day.

In Nepal, this black round cap was taken up, but the innate sense of beauty of the Nepalis gave it a new artistic character—it was made of dark velvet with beautiful embroidered patterns all round. But the Gurkha regiments in the British Indian Army used to have these little round caps which would be strapped round the chin. Fortunately through Mahatma Gandhi's influence and that of the Congress, this ugly black felt cap is being largely replaced by a far more elegant cap of white home-spun cotton *khaddar*—the famous *Gandhi Cap* of present-day India.

Bengali kurta (panjabi) and shawl

We may note that with the spread of education the gradual tendency is now to eschew all colourful dress, particularly among men. There are of course tribal peoples who on gala occasions sport vivid colours on their persons. The simpler primitive tribes of Central and Eastern India like the Gonds, the various Kol peoples like the Mundas, the Santals, the Sawaras, etc., and the Oraons, dress themselves (particularly their women) with flowers, and with red-bordered *saris and dhotis*, and they put on their persons various kinds of coloured beads and ornaments of brass or bell-metal.

Turban of a Sikh naval officer

But the hill tribes of Assam like the Nagas have most colourful costumes, in which their head-gear as well as their weapons are trimmed with feathers of all colours and sometimes coloured hair. To put on too colourful a dress is now looked upon as indicating a primitive mentality, particularly among the educated groups—this is quite in contrast with the vivid colours sported by some American people in their bush-shirts.

Turban of a police constable

Regarding foot-wear, a good deal of India went bare-footed, and until quite recently, it was not customary for women to wear shoes or sandals in many parts of the country. So, too, even in the bleak and cold Scottish Highlands, women went bare-footed during the greater part of the year. Foot-wear is a necessity in the sandy regions as well as in the colder regions of the North, and in the mountains. The Pathans and the Maharashtrians very commonly use sandals (*chaplis, chappals*) of classical patterns, and these have now spread all over India.

The typical Indian foot-wear was a kind of slipper open at the heel (these are known in Bengal as *chatis*), and there are shoes with the toe upturned known as *Nagra-jutas*, which are very popular in the North. Shoes of European pattern whether with lace or without are now quite popular. The orthodox people wear wooden clogs with a knob between the big toe and the next toe to keep it attached to the foot; and this primitive wooden foot-wear can be compared with the *getas* of Japan and the *sabots of* Holland, Belgium and France. Elegant forms of *Nagra* shoes sometimes made in silk and with embroidery, and sandals with straps in all kinds of beautiful trimmed leather, are popular with Indian ladies at the present day.

With the develpoment of Indian nationalism, the Indian *intelligentsia* has been feeling for the last two generations the need for having a common dress for the whole of India. Nationalistic-religious movements like the Arya Samaj preferred to go back to the old Hindu dress as far as possible, and this led to a reaction in favour of the *dhoti* and the upper garment among the Panjab Hindus, and Hindus of North India also who were getting more and more accustomed to trousers. At the same time, it was felt that trousers or shorts are more business-like for rough and ready work.

The Congress has gradually evolved a sort of pan-Indian dress, and this is generally worn all over India.

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The Gandhi Cap which is quite a simple and elegant head-dress, being made of coarse white cotton home-spun (*khaddar*), was adopted by the Indian National Congress latterly as a badge of nationalist aspiration. Gradually through Congress example, a *dhoti* reaching up to the ankle and worn in the North Indian fashion, a *kurta* or Indian tunic of the style which was made popular for the whole of India by the Bengalis, together with a Gandhi Cap and a pair of sandals, became the generally accepted dress for Indian nationalist workers.

To that was added a short waist-coat, of thick *khaddar* home-spun stuff and generally of some dark colour, which was worn above the tunic. India's popular Prime Minister, Mr Jawaharlal Nehru, popularised this kind of waist-coat which has now come to be known as *Jawahar-bandi* or Jawahar waist-coat. In place of the waist-coat is also used a scarf or shawl, hanging round the neck, or used like the Greek *himation* draping the upper limbs and leaving the right shoulder free. During the winter, people prefer to use a home-spun woollen scarf on the top of the waist-coat. This may be declared to be a kind of Common Dress for the whole of India. Only those who are accustomed to use trousers can use loose or tight trousers in place of the *dhoti*. A buttoned-up coat, of woollen home-spun, can be used in winter above the *dhoti* or trousers. Like the *Kulha Pehlevi* or the *Pehlevi Cap* for the present-day Iranians, this kind of dress may be looked upon as being distinctive of present-day India, and Muslim nationalists also wore it as much as Hindus. For women, a *sari* made of *khaddar*, with or without a scarf, and sandals have also come into vogue.

The Indian aristocratic circles wore garments of silk stuffs made at Banaras, Berhampore in Bengal, or Madura in South India, and they are as colourful as they are gorgeous with their gold embroidery. For gala occasions, Indian women always wear them, whenever they can afford them; and this makes a gathering of Indian ladies on some special occasion a most beautiful feast of colour.

The physical beauty of the Indian women is set to its greatest advantage in a gold-embroidered silk *sari* in some vivid colour, and ancient Indian and mediaeval poets and artists were also appreciative of these coloured silk *saris*. Formerly it was the custom for women to wear as many gold ornaments and jewels as they could afford, but nowadays the taste is becoming more and more chastened in favour of artistic beauty rather than heavy quantity.

In ancient India there was not much of mutilation of the human body for decorative purposes. Tattooing (*Godna* or *Vlki*) appears to have come to India in post-Muhammadan times, and is now fairly common in North India. But in ancient India they used to paint designs on their bodies with sandal paste and with other harmless materials. Gold and silver jewellery were very much in evidence, and the only mutilation of the human form divine permitted in ancient India was in piercing the ear-lobes for heavy ear-rings, and sometimes the soft flesh of the ear-lobes hung down through the weight of heavy ear-rings and big holes in the ear-lobes were filled with gold and silver circles.

But the piercing of nose for jewellery, which is quite in vogue in India but is now frowned upon by the educated classes, was not practised in ancient Hindu India, as our sculptures and paintings show. It would appear that the habit of piercing the nose for little florets of gold and precious stones and for nose-rings seems to have been introduced by the Muslim invaders of India, particularly from Arabia and Iran.

Piercing the nose for nose-rings is found mentioned in the Hebrew Old Testament, and it was also the Arab custom, and this came to India; and we find sometimes that the face is disfigured by all sorts of nose-rings, big and small, and occasionally they used to be so big as to require the support of a silver or gold chain resting above the ear. In some parts of India we find as many as three holes pierced in the nose, two on either side of the nostrils and one in the centre, through which a little gold crescent or pearl (*besar* or *nolok*) would hang.

In Andhra, even men pierce their nose for a tiny gold ring; and gold rings for the ear used to be fairly common for men all over India. Fortunately, this practice is becoming rarer and rarer, though still a few elegant ladies of fashion would sport a little emerald or ruby or diamond floret on one side of the nose. We read in the papers that this little ornamentation, although it entails the piercing of one of the nostrils, was very much appreciated in France and elsewhere as a kind of artistic jewellery patch on the face.

India produces some distinctive kinds of wearing apparel. The embroideries, whether in gold or silver thread or in different coloured silks or in cotton are famous, and are among the most artistic things produced anywhere in the world. The Assam silks in their variety are a most wonderful asset for India in the matter of dress—particularly the *muga* silk with its brilliant gold lustre. So also the silks of Berhampore, Kashmir and other places. The woollen stuffs of India, the various kinds of embroidered shawls, are also famous. Each area has got its special stuffs and patterns.

But the most remarkable thing in Indian dress, in the dress of both men and women, is its innate simplicity. Indian dress, excepting among some of the more elaborate costumes, e.g., in Kashmir and a few other places, is simplicity itself. The *sari*, which is one of the most beautiful dresses for women imaginable, is just one piece of unsewn cloth which is made to drape a woman's body, whether tall or slim or short or stout, without making it look ugly in any way, and even enhancing its beauty.

The unmeaning and uncomfortable stiff collar and tie of European men's dress are also not a part of

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Indian dress. With the Indian ideal of plain living and high thinking, Indian dress accords itself very well. Europe has within recent years learnt again that it is no shame to expose the human form divine, particularly in athletic work and for strenuous labour, as well as in the hot weather. India has never been ashamed to expose the human body if there was any need for it.

It is rather remarkable that although India is essentially a peace-loving country, as a matter of convenience India made contribution to the military wardrobe of the world. The English and following them other European powers found all these convenient and hence they took these up. We have already mentioned the Jodhpur Breeches for horsemanship, and the shorts and *putties* for active military operations; and we should also mention a particular Indian colour, which the Indian army took up for active service when colourful parade dresses would be a hindrance and would prevent camouflage. It is the *khaki* colour.

This was found convenient in British campaigns in the North-Western Frontier, and for field work this earth-brown colour was taken up. The word *khaki* is of Persian origin, from *khak* meaning 'earth'. The German Army authorities formed their *Feldgrau* or 'feld grey' for military uniforms from the same idea.

Everywhere peoples' dresses are undergoing a change. The model is London for men's dresses and Paris for women's costumes—this is the ideal for the greater part of the world. But there is a reaction in the East. Buttoned-up coats, without collars and ties which were adopted by the Dutch in Indonesia have become accepted in China, and in India also these are coming into vogue.

The Indian Official or Ceremonial Dress is now a pair of *churidar pajamas* or white cotton trousers wide up to the knees and tight-fitting from the knees to the ankles, a long tunic, black or white, called an *achkan* or *sherwani*, and a white Gandhi cap. This is becoming generally adopted. In diplomatic and other international circles, this dress is now characterising representatives from India. The Pakistan official dress is also like this. In addition, of course, Indian men wear their provincial dresses when attending functions in their own States, but Indian ladies always very wisely stick to their *sari* made of the gorgeous Indian silks and other artistic stuffs, for which the country is famous.

Rajasthani dress—
choli *and* ghagra

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The new Middle School for girls, Simdega

National Extension Service Comes to the Tribals

Victor Rosner

HELP a man, he will thank you for it. Teach a man to help himself, he will bless you all his days. The National Extension Service, as visualised by the Government of India, aims at transforming the social and economic life of the village, by teaching the villager to help himself. It is an attempt to start the process of changing the village by the person who matters most, the person who will profit by his own efforts, the villager. Far from being a cog in the machine of Government the villager is a personality, someone of moment, a vital count in the plan of making his country a better and healthier place to live in, a land to love.

"New brooms sweep clean"—never more slowly than among the Tribals among whom tradition and custom are as alive today as they always were. The N.E.S. is as much for the tribals as it is for anyone else who calls India his motherland.

In the early days of December 1955 I had the oppor-

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tunity of covering the activities of an N.E.S. Block among the tribals on the southern rim of the Chhota Nagpur plateau where Bihar touches Orissa.

The block, known as Simdega, after the sub-division of that name, in the district of Ranchi, in the province of Bihar, takes in an area of 198,412.8 acres. It includes two Police Stations, that of Simdega and of Thetetangar, 105 distinct villages, and a population of 38,765.

In a land of low hills, never going above 2,000 ft. of ravines, sal forests and paddy land which make up the N.E.S. block of Simdega the main problem was the lack of communications. For the work to be a success the N.E.S. staff must keep in constant contact with every village, and keep in touch with as many villagers as possible. The people must be made to realise "they are not forgotten". To this end great attention was first paid to the work of making new roads—linking the villages to the only main highway in the block area, as also, when necessary, with the existing District Board and Forest roads. Within a year of its operating 21 miles of motorable road were constructed in the rural area linking 42 more villages with the centre.

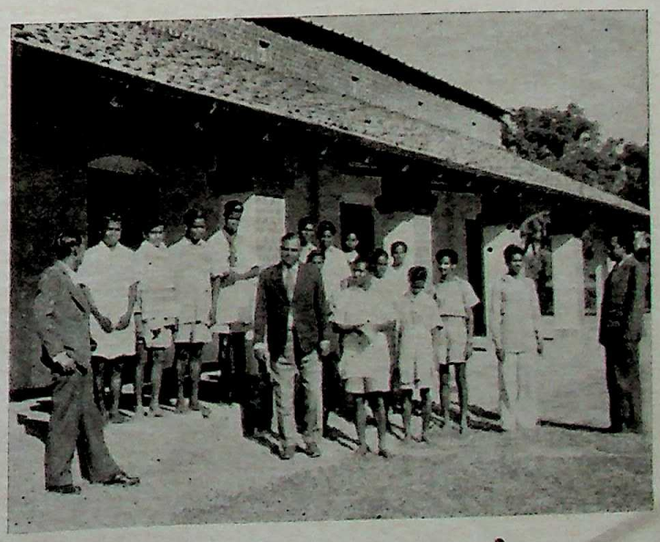
If "Communications" was a problem, there was another just as formidable—the switch over to better methods of paddy cultivation. There is no one more conservative than the peasant who is loath to trust, leave alone to try another way, other than that of his forefathers. "What was good for them is good for me. The same fields fed them. They feed me. They will feed my sons after me."

We can well imagine the position of the Adivasi farmer in the Simdega block area where drought and bug may ruin his crop overnight and force him to mortgage his fields or run away to the tea gardens of Assam or the Duars. Attempting a new method makes no sense to him. It is a hazard he can hardly take. His holding is too small—due to continual fragmentation of the paternal inheritance according to tribal Law—to allow him to set aside even an acre for a trial. Make him an offer of seed and fertilizer, the Adivasi will baulk, his suspicions are aroused in another "Trojan Horse".

One of the many wells constructed in the Simdega block

Tribal girls working at their school

Tribal school boys in front of their new science hall



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Modern building of the girls school

Seeing his point of view we can easily realise what the Adivasi thinks of the Japanese method of paddy cultivation. It demands care in the preparation of seed beds, patience in the choice of good grain, great attention in transplanting, constant work among the growing paddy—everything that asks his best and constant effort. He is not ready for it.

Out of the 40,916.46 acres under paddy cultivation in the block area 682 have been worked according to the Japanese method. The average yield per acre has risen from 12½ maunds to 68 maunds—an overall increase of 48 maunds per acre. If you consider the acreage given over to the Japanese method it seems a small bite—1/60th of the whole area—but seen in the background of the block under study, it becomes an attempt all the more to be appreciated.

If the land had to be made more fertile and the crops more stable in an area where 90% of the fields depend on the Monsoon for their water, irrigation schemes had to be taken in hand. Here again it was a long drawn out struggle against custom and prejudice, against suspicion and rumour, before any work could be attempted.

It speaks well of the N.E.S. in Simdega to have effected a total of 142 Minor Irrigation Schemes between 1950-1954. In 1955 seven more works were completed in dams and weirs. There are 30 more schemes nearing completion. What all this means in "maunds paddy" can be judged from the fact that Simdega was declared a surplus area.

With the introduction of the "grow more food campaign" the number of wells and surface wells—locally known as *daris*—had been increased by 78. The N.E.S. within a year had helped in the digging of 21 more wells.

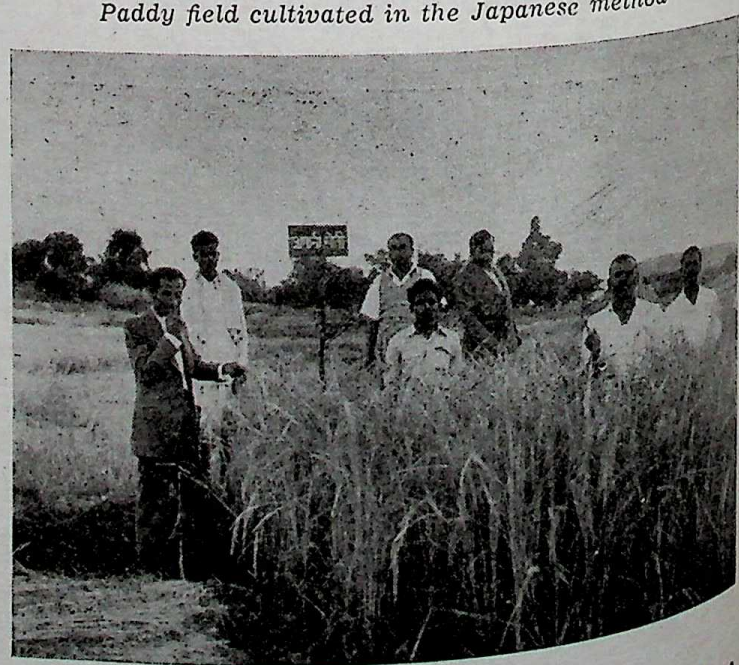
A model farm—dairy, fruit and vegetables—at Simdega is contributing to a very great extent in interesting the people to grow more vegetables. To a people who so far have always depended on the forest for their quota of "greens", vegetable gardens are now a source of income and vitamins, besides a welcome change in an otherwise hum drum diet. In 1955 a total of 4,256 fruit grafts—mango, orange and lemon—were distributed to the people in the block area, besides 90,750 seedlings of various vegetables. Agricultural shows have given a new zest to fruit and vegetable growing besides poultry farming.

As a result of all this publicity 16.25 acres have been added to the already existing vegetable gardens. It is not so much the acreage as the fact that each plot is another link binding a man to the earth, and giving him a deeper sense of his independence.

A healthier peasant bound to the land and independent is an achievement well worth the efforts of the N.E.S. But brawn and muscle are not the whole man. In an area where one in a thousand will pick up a paper out of curiosity, not to say with pleasure there is a crying need for schools.

The Christian missionaries were the first in the field of educating the tribal peoples of this land. Their

Paddy field cultivated in the Japanese method



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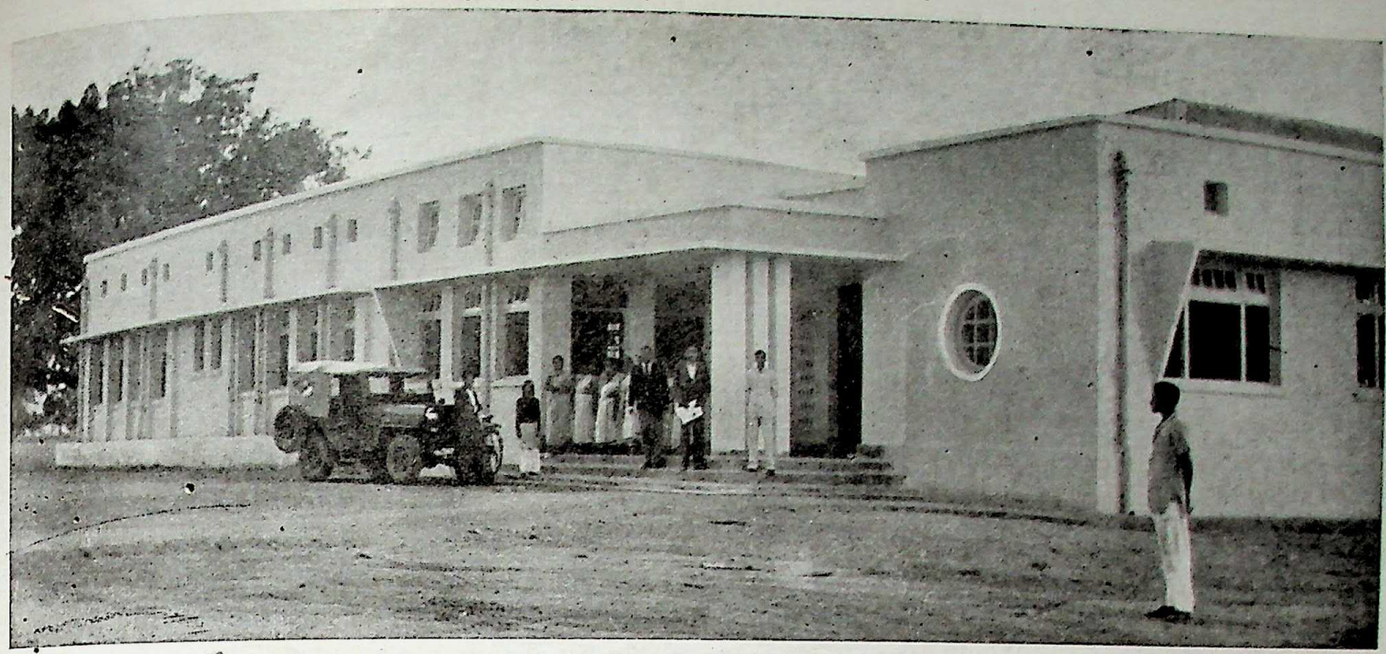

Co-operative Society godown at Simdega

solicitude has always been more schools and better schools. What they have achieved in this line, not only in the block area of Simdega where most of the schools are run under Christian auspices, but throughout Chotta Nagpur is apparent to all who come in contact with the Adivasis in the service of the Government and in the Church.

The N.E.S. has put forth its best effort in this same field of education. In the block under consideration there are 5 High Schools, 6 Middle, 70 Primary, and 4 Basic Schools. A total of 11 High School buildings whether in the form of new class rooms, science halls or hostels have been constructed with their help. To the existing Primary Schools 9 new buildings have been added. One of the finest achievements of the N.E.S. in Simdega is the modern Middle School building for girls at the centre.

A new venture has been to start night schools. They are functioning in 24 villages. To get the people to come together 14 Recreation Centres have been started. It is heartening to see the young men playing games or practising theatricals. Books and daily papers have also been put at the disposal of the people in these centres. Folk songs as also Tribal dancing and drumming are encouraged.

Among the tribal people of this country the panchayat or Council of the Elder has been the governing body of the Tribe, in all matters relating to the life of its members. The Panchayat System of local self-government is not something new to them. The N.E.S. has encouraged the registration of these various village panchayats thus giving them standing with the Government, adding weight and authority to their decisions. Their powers have also been extended. In the block area 24 such panchayats have been registered and are functioning as per the Gram Panchayat Act. It is these panchayats that are responsible for the 24 Co-operative Societies that are existing in the Simdega Block area.

Facts and figures are of consequence if we are to judge of the progress of a scheme. The N.E.S. at Simdega speaks for itself. There is something more that cannot be marshalled by figures—the effort of the Adivasis to lift themselves in view of the great project to build a new India with the help of her own sons and daughters.

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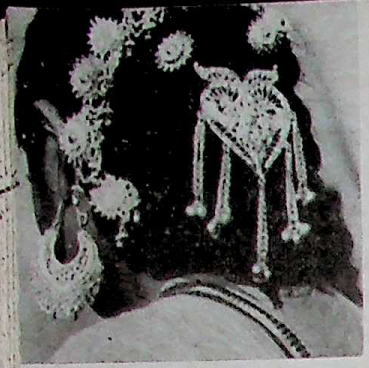

North Indian silver jewellery — head pieces

Trends in Modern Indian Jewellery

Jamila Brij Bhushan

THE history of Indian jewellery goes back to the remote past. No excavation of the site of any civilisation has failed to throw up jewellery finds of an astonishing degree of skill and craftsmanship. It is the aboriginal tribes of our country who provide us with specimens of the earliest form of jewellery.

Lacking the means to satisfy the inherent desire for personal adornment, primitive man probably turned to his surroundings for material and adorned himself with dried grass, stalks of creeping plants, seeds, etc. Later he cast these shapes in bronze or carved them in wood. Still later, his imitative instinct satisfied, he turned his hand to devising original forms. Repousse work helped him to work on themes flowing from religious ideas and various symbols of worship.

Both Indian and European workmen had, at a very early stage, discovered that it was easy to cover a large surface with built-up spiral of thin wire cast by the cire perdu process. We meet this spiral form also in Etruscan and other pre-historic jewellery and metal works.

Both in design and technique there are many points of resemblance between the gold jewellery of South India and pre-historic Europe. Some patterns of European filigree jewellery are exactly the same as those still used by the women of Malabar while the broach worn by Ladak women is identical with one found among the Celtic remains of Ireland. The South Indian workman sometimes combines two *garudas* in such a way as to be indistinguishable from the double headed eagle of the Imperial dynasties of Europe.

The crescent-shaped chand worn around the neck and the chik or gulubandh which fits close to the neck. The bijli hangs from the ears

In most parts of India, scanty clothing exposes a large part of the body to be covered by ornaments. In the extreme North and hills, however, the severe climate necessitates the covering of most of the body and the largest number of ornaments are worn on the head or ears.

Tradition has made it compulsory for women to wear some ornaments and every girl must, at the time of her marriage, be given at least one piece which differs from State to State and which must be worn by her until such time as she becomes either a widow or dies. Some of these like the tiny head necklace of Coorg and the *Vor* of Rajputana have persisted through the ages and had their counterparts in jewellery finds of Harappa and Mohenjodaro.

Not too many examples of ancient Indian jewellery have been preserved but excavations of certain sites have revealed finds which are of interest not only to the connoisseur of craftsmanship but also to the student of history who finds revealed in them the various influences brought into our peninsula by different conquerors.

The finds of Taxila (C. 300 B. C.) reveal the extent of Greek influence which had permeated the arts of the time. Here we find strong traces of Greek influence which are absent in contemporary Eastern and Southern jewellery. The Greek figures of Eros, Psyche, the sea-lions, the pyramid as opposed to the cylindrical, are here found blended with the lotus, crescent, lotus buds and other typically Indian motifs.

The next pronounced influence we find is that of the Muslims which permeated all fields of arts and crafts and blended harmoniously with Indian designs to produce articles which, after so many centuries, are still the most beautiful that can be found. The great contribution of the Muslims (especially the Mughals)

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was in the field of embellishment—articles underwent a change not in design but in finish.

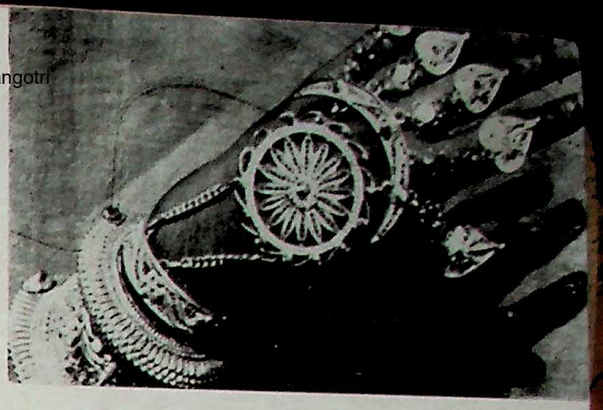
Under them a piece of jewellery became an artist's delight with a stone encrusted front and enamelled back. It was inevitable that the taboos of Islam should influence the designs of ornaments and replace the Hindu emblems. The human and deistic motifs of gods and temples gave place to flora and fauna; animal figures came into prominence and the combination of the crescent and star, a symbol of Islam, became extremely popular. The lotus and other Hindu emblems continued to be used only in strongholds of Hindu culture such as Banaras and the South.

The recent and most overwhelming influence has, of course, been that of the British who came with concepts widely different from those already existing in the country. Unlike the Muslims, they were no aesthetes and their patronage of art was limited by their desire to minimise wastage of time, money and labour. They also brought in a state of law and order unprecedented in the country. The whole country was opened up by the new means of communications and localised thoughts and fashions could fuse and mingle in a single railway carriage eliminating restrictions of fashions to certain parts of the country. Local fashions lost their significance and designs of one state became increasingly popular in others.

The British civil servant took great interest in India's unexplored cultural heritage and taught Indians a great deal about themselves. The country was, for the first time, opened up to the West absorbing various influences in fashions and designs. An awakening national consciousness was a result of these factors and India, while absorbing fresh influences, refused to be carried away completely by them.

Twentieth century jewellery, therefore, shows two distinct trends—the current streamlining, an influence of the modern machine-minded world and the 'back to Indian' trend represented by the use of old pieces of Mughal jewellery or imitation of certain ancient Indian designs in new ornaments.

Traditions and customs which had existed undisturbed through the centuries received merciless



Village woman's hand jewellery

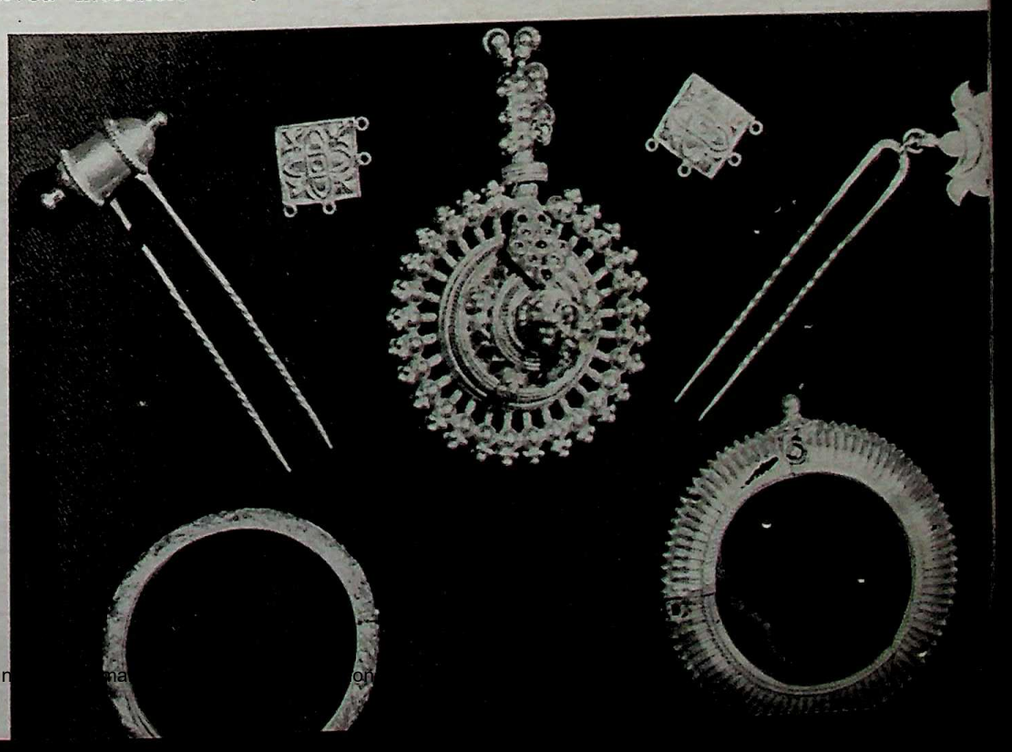
treatment at the hands of the suddenly awakened and emboldened machine-minded individual. New patterns requiring harder metal came into vogue and the Indian sacrificed his age-old love of un-alloyed metal to the cause of fashion and increased beauty. From the West was imported the carat system ensuring against indiscriminate alloying. He has even gone so far as to give up the use of yellow in favour of white gold in cases where the brightness of the metal would detract from the beauty of stones.

Another contribution of the West has been the polishing of gold. Before this century polishing had been unknown to the workman who cleaned an ornament thoroughly and painstakingly but left the surface dull and unpolished. The twentieth century has seen the advent of metal polishing and there polished ornaments are now greatly appreciated.

The greatest contribution of this century, however, is in the field of design. For centuries the Indian workman had stuck to the existing shapes never improving or changing. Now suddenly there is a bewildering variety of shapes to choose from. Some of these have the ephemeral character inherent in modern art and architecture and have no lasting quality but others have been adapted to suit the Indian style and become a graceful adjunct to any costume.

With the post-war trend for simplicity necessitated by high prices of gold and stones the Indian woman has turned to the family coffers for old ornaments which because of their beauty and lasting quality excite the envy of her less fortunate sisters.

The dictates of fashion spur the modern woman on to new efforts and not content with expensive jewellery, she turns for inspiration to her sisters from



Silver jewellery from Bombay

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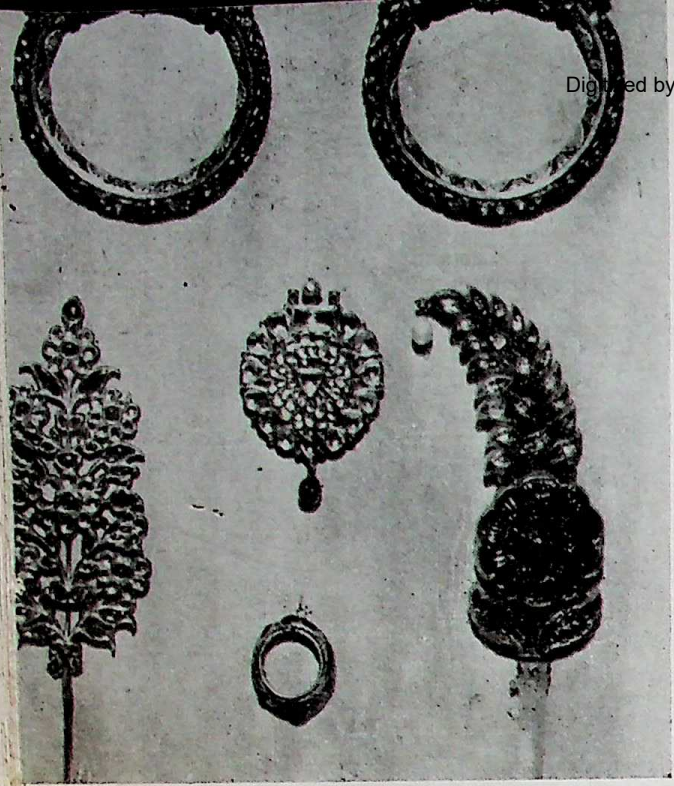
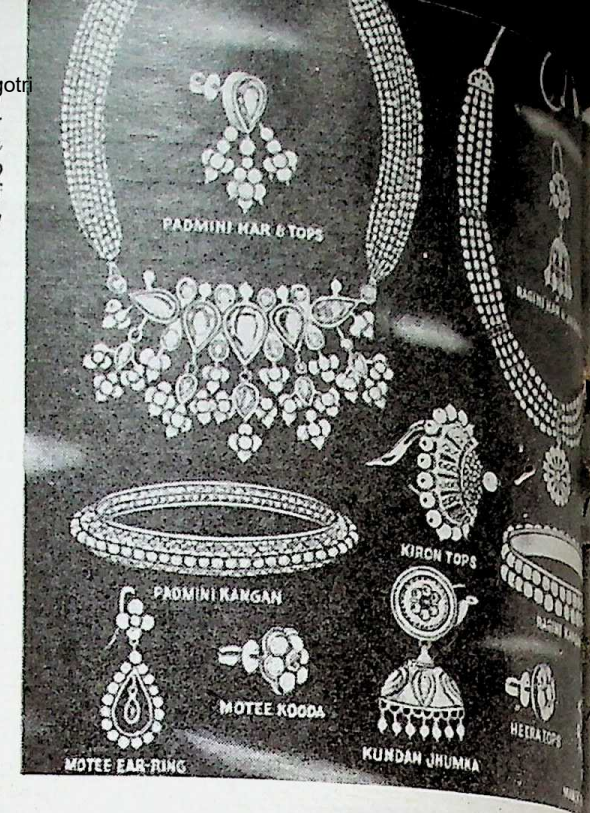


Mughal jewellery



These few pieces of Oriental Pearl jewellery demonstrate a high order of craftsmanship both in originality of design and in quality of execution

the village. Having cast off the shackles of tradition she appears at a party dressed in silver ornaments to match a white *sari* or *choli* or to suit her mood.

All the influences pervading Indian fashions touch only the upper classes. The lower classes always have worn and will probably continue to wear only the traditional ornaments which have been handed down in an unbroken continuity of design from the times of the Ramayana.

The Indian love of jewellery is attributable not only to a desire for personal ornamentation but also to the unstable conditions prevailing in the country and the total absence of banking facilities. The precious metals could always be converted into ready cash during a financial crisis and the thrifty man took care that none of the precious metal was frittered away in useless ornamentation. He stuck to simple shapes which involved very little joining and shaping and could always bring in what he had paid for it.

The richer classes, not wishing to load themselves with too much metal, turned to precious stones as a safe investment and dazzling ornament. Since cutting detracted from the size and weight of the stone it was left untouched, sometimes being pierced and worn like beads.

The modern realisation that, in spite of loss of weight, cutting raises the price of a stone has resulted in Indians investing large sums in ornaments studded with these although uncut stones still continue to be firm favourites.

The ancient Hindu invested certain stones with qualities of good and evil and their descendants continue to hold the same beliefs. The emerald is supposed to bestow wealth and eloquence and to preserve women in childbirth. The torquoise brings prosperity and will fly into pieces if poison is touched by the hand on which it is worn; if put in the bath water, it will cure boils. It is still possible to distinguish a certain sect of Muslims by the torquoise ring they always wear. The blue sapphire is a stone about which the Indian continues to be extremely superstitious. A man seldom buys it outright. He takes one on approval and wears it for a few days. It can bring him either extreme good or bad luck. If lucky, his prosperity will know no bounds.

Stone therapy is a recognised principle in the Indian system of medicine and all precious stones except the diamond are used in curing certain diseases and in making *surmas* for strengthening the eyes.

Since ornaments have existed in India for so long, the profession of the goldsmith is also, of necessity, very ancient in origin. We find mention of the goldsmith in the Arthasastra of Kautilya and the earliest-known Sanskrit drama 'The Clay Cart'.

With the crudest and most primitive of tools at his command, the Indian goldsmith, or *sunar* as he is known in Northern India, manages to achieve results comparable to those achieved by any workman in the world. He is simply a day labourer and the fact that he works with precious metals does not make him affluent unless he takes up pawn-broking or money lending.

The Indian goldsmith is painstaking, efficient and expert in his craft. He can copy a most difficult pattern but he very seldom displays any originality. Unlike his European counterpart he is never an artist, merely an artisan. This is due to the peculiar concept of Indian art which is different from the European. Indian art is never a means of an aesthetic experience. It is a means of edification. In both design and formula are found definite meanings for Indian art is never originally without a precise significance and is never purely decorative.

The goldsmith, according to the basic Hindu concept is not an artist with a special gift for experience but a mere artisan meeting a general demand. His vocation is hereditary and he performs a corporate rather than an individual function.

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Assamese Literature*—I

(Ancient Period)

Suryya Kumar Bhuyan

THE ancient period of Assamese literature represents its output from the earliest times down to the occupation of the country by the British in 1826, since when it came in contact with western ideas and western methods of literary treatment.

It is generally accepted that Aryan culture had taken its roots in Assam since very early times, and that Assamese is a Sanskritic language directly connected with *Pracya Magadhi Apabhramsa.* The ancient kingdom of Kamarupa or Assam has accordingly been swept by a wave of Hindu civilisation which has maintained its cultural homogeneity with the rest of India, and physically isolated, Assam was not outside the cultural hegemony of Aryyavarta. The literature produced by a people like the Assamese is thus essentially Indian in spirit and its individuality is derived from the impact of local circumstances, physical and political.

It is difficult to correctly estimate the time from when books in the Assamese language first came to be written, because a complete and exhaustive search for such writings has not yet been made. No State archive has been maintained in Assam in a continuous manner as there has been no unbroken succession of a single line or dynasty of rulers. Political upheavals have effaced the traces of any archives that might have been in existence before. In spite of the loss and damage to which Assamese manuscripts have been subjected through the ages past, we believe that some fortunate antiquarian in Assam may come upon a manuscript which will be as momentous as the *Arthasastra* of Kautilya, the dramas of Bhasa, and the *Samarangna* of King Bhoja.

Besides, the creation and growth of Assamese literature were hampered by the prevailing notion that all ideas and thoughts are to be written in Sanskrit, and it is believed that learning was mainly confined to the Brahmans. It was only during the period of Vaisnava revival and the century immediately preceding it that books were written in Assamese for the enlightenment and edification of the common people. The realisation of the utility of the vernacular medium thus opened the flood-gate of learning, and we are amazed at the sight of the immense quantity of Assamese books which have come down to us. It is a tragedy that a conception of the wealth and variety of ancient Assamese literature has not yet been fully brought home to the people of Assam, and to our brothers and sisters in India, though efforts are in progress under the auspices of individuals and institutions to resuscitate the literary treasures.

The absence of early specimens of the vernacular literature of Assam is redeemed by the fact that its people were a highly intellectual and enlightened race, always in search of truth and anxious to disseminate it in all possible ways. There were learned pandits in the country; and owing to the encouragement given by the monarchs, scholars flocked to Assam from different places. The account of the Chinese pilgrim Hiuen-Tsang and the copper-plate inscription of the period bear testimony to the scholarship and patronage of Assamese monarchs and the presence of learned men in Assam. "The king", wrote Hiuen-Tsang, "is fond of learning, and the people are so in imitation of him. Men of ability came from afar to study here." A similar statement is made in the copper-plate grants of King Vanamaladeva and King Ratnapala alluding to the presence of learned men, religious preceptors and poets in their respective capitals Harupeswara and Durjaya.

Now the question is: were there no books written by the vast congregation of scholars and poets in the ancient kingdom of Kamarupa. The literary remains of the great pandits of Assam have been lost altogether, though in the field of *Smritis* we get occasional glimpses of the views they held, different from those expounded by the *Smritikars* of other parts of India. The literary genius and attainments of the Assamese people of yore are preserved in the texts of the copper-plates, for they were compiled with great care, in a sonorous and reminiscent style, in keeping with the dignity of the donor-sovereigns and the erudition of the scholarly composers. A few extracts are given below:

The spread of King Bhaskaravarma's warlike fame is thus eulogised in the Nidhanpur copper-plates: "As the portrait of the sun (Bhaskara) is seen simultaneously in numerous pots of water, the king's portrait, owing to his abundance of prowess, was seen uninterrupted in the places of his vassal chieftains."

* Talk broadcast from the Delhi Station of All India Radio on April 27, 1955.

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In Harjaravarma's copper-plate, King Harshadeva is described as "a monarch who was endowed with numerous qualities, and who governed his subjects as if they were his own sons, and who desisted from ever oppressing them."

King Ratnapala is described in his copper-plate as "an Arjuna in fame, a Bhimasena in war, a Kritanta (god of death) in wrath, a forest conflagration in destroying his plant-like enemies, who is the moon in the sky of learning, the sweet breeze of the Malaya mountain in the midst of the Jasmine-like men of good birth."

The description of Ratnapala's capital Durjaya summarises in a sense all the equipment of an ideal state, in profundity of learning, in steadiness of the mind, and in military strength. "The boundaries of Durjaya", runs the inscription, "were encompassed by a rampart, furnished with a fence strong like that used for the game-birds of the Cakas, fit to cause chagrin to the king of Gurjara, to give fever to the heads of the untameable elephants of the chief of Gauda, to act like bitumen in the earth to the lore of Kerala, to strike awe into the Bahikas and Taikas, to cause discomfiture to the master of the Deccan country; and generally to serve for the purpose of discomfiting the king's enemies."

About the inhabitants of Durjaya it is recorded in the copper-plate: "Here dullness might be observed in necklaces, but not in the senses of the inhabitants; fickleness in apes, but not in their minds; changefulness in the motions of the eyebrows, but not in promises; accidents happening to things, but not to the subjects."

The above passages are sufficient to give an idea of the existence of the intellect and humanism which lead to the production of literary masterpieces.

The plentitude of book-production in ancient Assam is borne out by the fact that several volumes of fine writing were presented by Bhaskaravarma to his friend and ally Emperor Harshavardhana of Kanauj. The presents also included a book of aphorisms, which was probably a collection of the proverbs and sayings in vogue in Assam.

The ancient records bear testimony to the musical aptitude and talents of the Assamese people. In the Afsad inscription of King Adityasena, a reference is made to songs sung on the bank of the Brahmaputra. Bhaskaravarma asked Hiuen-Tsang about the significance of a Chinese song sung in Assam describing the exploits of the Chinese prince—Chin Wang Shihmin.

Such a musically-minded people like the Assamese could not but depict their feelings, experiences and traditions in a musical garb. We have in Assam a large mass of popular songs coming down from generation to generation, composed by unlettered rustic bards, mostly extempore, and sung by the people belonging to all sections of society. These songs are sung on occasions like marriages and spring festivals, for the appeasement of irate gods and goddesses, and for the inculcation of the evanescent character of human existence; and they are known as *Biya Nams, Bihu Nams, Ali Nams* and *Dehabicharar Geets*. There are also songs describing the different seasons, and the woes of boatmen whose profession keeps them constantly aloof from their dear ones. The stories of princes and nobles are also represented in these folk-songs of Assam. Curiously enough, some sentiments recorded in those songs find an echo in Buddhist literature. In an Assamese song about a prince named Phul Kowanr, his disconsolate sweetheart goes to the extent of threatening her mother that should she be disappointed in her love she will play the role of a co-wife with her mother. This novel, though repulsive sentiment finds an expression in the Pali Therigatha, in the song attributed to Bhikshuni Utpalavarna. These songs are regarded as specimens of Assamese composition of the period of which we do not possess any recorded remains.

The most outstanding figure in the dark non-literary period of Assam is the natural philosopher Dak whose sayings are still held in high veneration like Vedic utterances—*Dakar bachan Vedar Vani*. Aphorisms like Dak's sayings are in vogue in Bengal and Bihar. The Assamese claim him to be an inhabitant of Lehi-dangara village in Barpeta sub-division, in the district of Kamrup. Almost every Assamese family used to possess a manuscript containing the aphorisms of Dak, known popularly as *Dak-Bhanita* and *Dak-Charit*. Some of the sayings of Dak bear a striking resemblance to the literature of Buddhism. Like Ausadhikumar of Maha-unmarga Jataka, Dak at the moment of his birth prescribes remedies for relief from the pains of childbirth. Dak also enjoins upon the observance of Dharma, as manifested in the construction of tanks and temples, centres of food distribution, and the plantation of trees. He also dilated upon the futility of man-power, wealth and decorations as man's life is uncertain and short. He glorifies charity and gifts to which nothing else is superior. The methods of attraction mentioned by Dak as resorted to by women in alluring men find an echo in Buddhist literature.

Kamarupa is still believed to be the home of spells and charms of magic and witchcraft—*Tantra-Mantrar Des*; and stories are circulated all over India attributing to Assamese women the supernatural power of converting a man into a lamb. The charms and spells are still used, not to produce any thaumaturgic effect, but to cure certain ailments, and avert certain calamities, very frequently as a supplement to medicinal specifics. The language of the *mantras* is extremely archaic and the thoughts cryptic and mystic. The *mantras* embody specimens of the pre-formative period of Assamese literary diction of the age of which we have no recorded examples.

A book of songs and aphorisms written by a number of Tantric Buddhists between the eighth and twelfth centuries was discovered in Nepal by the late

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Pandit Haraprasad Sastri, and it has been published under the title "Bauddha-gan-odoha". We get there the names of twenty-three poets, some of whom are believed to be men of Kamarupa, where the Varjrayana and Sahajayana forms of Buddhism were developed to some extent. The peculiar diction of the songs appears to bear some resemblance to the forms of Assamese poetic style in vogue till this day. Books of this kind may still be discovered throwing light on the very dark period of Assamese literature, when there was the needed scholarship and talent, but no visible performance in the direction of written Assamese literature.

As far as is known at present, Assamese literature in the strict sense of the term came into existence in the thirteenth century. The old Hindi kingdom of Kamarupa was dismembered about the twelfth century, and a new kingdom, known as Kamata came into being with its capital at Kamatapur, at a distance of some eighteen miles from Cooch Behar.

Kamata extended from the river Karatowa on the west to Barnadi, opposite Gauhati, on the east; and it comprised the present districts of Rungpore, Cooch Behar, Goalpara and Kamrup. Eastern Assam was still then in a state of flux, being ruled at different places by the Chutiyas, the Bhuyans, the Kacharis and the Borahis and the Morans. The Shan conquerors from Northern Burma, generally known as the Ahoms, had established their domination in a portion of Eastern Assam in the year 1228.

Being virtually a continuation of the old Kamarupa kingdom, though in a truncated form, Kamata became an asylum for the scholars and poets of Eastern India. The earliest Assamese poets on record —Hema Saraswati and Harihar Bipra enjoyed the patronage of the Kamata ruler Durlabhanarayan, who has been immortalised in the colophons of their poems *Prahlad-charit*, *Lava-Kusar Yuddha* and *Barbrubahanar Yuddha*. A third poet Kaviratna Saraswati wrote *Jayadrath-badh* under the patronage of the same enlightened sovereign Durlabhanarayan, and probably of his son Indranarayan as well. These four books are believed to be the earliest available specimens of Assamese poetry, though the perfection of the verses and the method of treatment presuppose several preceding generations of poetical endeavour.

The greatest figure in the firmament of Assamese poetry of this twilight was Madhab Kandali, who wrote under the patronage of Mahamanikya Raja who has not yet been definitely identified, though in all probability he was a non-Aryan ruler brought under the influence of Hinduism. Madhab Kandali translated the Ramayana, but only five out of the seven cantos are now extant. Another poem entitled *Devajit* is commonly attributed to Madhab Kandali. The diction of Madhav Kandali's poetry is elegant and refined, and difficult Sanskrit words have been rendered in mellifluous Assamese.

These early works bear definite traces of Vaisnavism, in their attempt to glorify the heroes of the Vaisnava pantheon, Prahlad and Ramchandra. They, however, lack the insistence and emphasis on the worship of Vishnu which are predominant factors in the writings of the great Vaisnava reformer and poet Mahapurush Srimanta Sankardeva, 1449-1568 A.D. In a way they were precursors of the Vaisnava revival, and they paved the path for ushering in the great outburst of devotion, music and poetry of the age of Sankardeva, who, in all humility, paid compliments to this preceding band of 'unerring poets'—*purva Kavi apramadi*—and compared himself to a rabbit in the presence of an elephant.

The full efflorescene of Assamese poetry came, however, with Sankardeva and his devoted disciples and kindered spirits. The saint lived up to the age of one hundred and twenty years, and during this long span of life he gave to Assam a treasure-house of literary gems, all aiming at the glorification of Vishnu and his several manifestations. He based his teachings on the *Bhagavatapurana* and hence his creed is known as Bhagavati Dharma. In his two pilgrimages to Aryavarta and the Deccan, Sankardeva contacted the saints of the age, acquainted himself with the various schools of thought, different media of literary expression and diverse melodies, dance-forms and song-patterns, and adapted them to the Assamese soil for the edification of his own countrymen. He himself translated several cantos of the Ramayan and the Bhagavata, compiled a number of episodes and wrote plays and songs. To perpetuate the recital of Vaisnava classics and the performance of dramas, and the spread of Vaisnava teachings, he established monasteries in Westen Assam, and his disciples carried the torch of Sankardeva's gospel to different parts of Assam by the processes initiated by their master. The devotional routine of a monastery was also repeated in every Vaisnava village and household, with the result that Assam began to resound from one end to another with *nama* and *kirtan*, conferring upon the people the blessings of refinement, single-mindedness and a capacity for united action. Assam's religious fame reached far off Rajputana, and the Rajput invader of Assam, Raja Ram Singha of Amber, received repeated warnings from his mother and his wife against the consequences of disturbing the peace of a country where there was universal *nama-kirtana* and where Brahmans and Vaisnavas were living in peace and happiness. The Satras or monasteries are still in existence, and age has not staled their sanctity and popularity. Poetry was not the only medium of propagating the Vaisnava cult. Brajabuli prose was introduced in the dramas, or *Ankiya Nats* as they were called. A saint named Bhattadeva, coming after Sankardeva, translated the Gita and the Bhagavata into elegant and lucid Assamese prose, and the great scientist Dr. Prafulla Chandra Roy, after reading the *Katha-Gita*, the Gita in prose, admitted the development of Assamese prose literature in the far distant

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sixteenth century which no other literature of the world reached except the writings of Hooker and Latimer in England.

Sankardeva's cult became extremely popular in Assam on account of the equality which it preached, and the simplicity it enjoined upon in devotional matters. It did away with the barriers of caste by placing the highest and the lowest ranks of society in the same category provided the men were devoted, righteous and refined in manners. It made it easy for tribesmen to enter into the fold of Hinduism if they complied with some simple requirements after their initiation.

As a result of the spread of Vaisnavism, there was an enormous output of literature in Assam. The epics, Puranas and the classics were translated into Assamese, either in their entirety, or in the form of selected episodes therefrom. Dramas were also composed in large numbers, and they were staged on sacred occasions in *namghars* or congregation halls, in Satras and villages, and also in secular functions like marriages and the receptions of distinguished guests. There were two main impulses which led to this output.

First, it was realised very early that the high ideals and thoughts enshrined in Sanskrit books were not accessible to the general public. It was, therefore, necessary to translate them into the language commonly spoken by the people. This realisation comes out distinctly in the advice given by King Naranarayana of Cooch Behar, 1540-1581 A.D., when he commissioned the scholars, assembled in his court, to write popular treatises on grammar, astronomy and arithmetic, and translate the epics and the *puranas*, so that the books will be read by women and *sudras* in the present age, and by Brahmans in later times. "It is only by this means", said Naranarayana, "that the scriptures can be protected from loss in this Kali-Yuga". Ananta Kandali, a contemporary of Sankardeva, adopted the Assamese medium in preference to Sanskrit, because he hoped that women, *sudras* and others will learn the true significance, and rejoice by listening to the books. Madhabdeva, the chief disciple of Sankardeva, said that the river of the nectar of love, which had shone forth formerly in Baikuntha has flooded the entire world, his master having broken open the banks.

Secondly, Assam being an independent kingdom there were a large number of princes and nobles in the country who could afford to give patronage to scholars and poets. Patronage emanated principally from the Ahom court in Eastern Assam situated in Cooch Behar and Darrang. Rama Saraswati in his *Puspa-haran Vana-parva*, alluded to the gift of books, money and attendants to enable him to devote himself whole-heartedly to carry out the orders of King Naranarayana to translate the Mahabharata into Assamese.

Royal patronage in Eastern Assam became copious from the middle of the seventeenth century when the Ahom kings were converted into Hinduism. This patronage reached a high-water-mark during the reigns of the kings Rudra Singha and his three sons, Siva Singha, Pramata Singha and Rajeshwar Singha, 1696-1769 A.D. The most outstanding figure of the period was the court-poet Kaviraj Chakravarti who translated the *Brahmavaivarta-purana* and Kalidasa's *Shakuntla*. King Rudra Singha and his son Siva Singha were themselves song-writers of no mean order; and Rajeswar Singha wrote a drama entitled *Kitchak-badh*. A poet named Kavisekhar Bhattacharyya wrote a book named *Hari-vamsa* dealing with sexology for the entertainment and education of King Rajeswar Singha's son Yuvaraj Charu Singha and the latter's consort Princess Premada Sundari. Many manuscripts of the period are profusely illustrated in colour, the notable examples being *Gita-Govinda*, *Hasti-Vidyarnava*, *Sankhachura-badh* and *Dharma-puran*. The death of Rajeswar Singha was followed by convulsions and strifes till the first quarter of the nineteenth century, and literary patronage began to dwindle in consequence.

Vigilence is the price of freedom, and Assam being an independent State it had to remain perpetually alert in order to ensure the efficiency of its internal administration and its immunity from foreign aggression. All useful information was therefore recorded, and precedents and past events were enscrolled in chronicles or Buranji's which throw light on the past history of Assam and also of India, and on the customs, manners and the economic condition of the people. The Buranjis of Assam have imparted a unique distinction to its literature in view of their practical absence in the vernacular literature of other parts of India.

Besides the Buranjis, treatises were also compiled, under the auspices of the government, on the art of warfare, on the construction of forts and ramparts, royal palaces and on the ailments of elephants, horses and hawks and all subjects, mastery over which was necessary for efficient administration.

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THEY ALL CAME TO DELHI

(*Continued from page 23*)

Bhakra-Nangal project in the Punjab, "It gives us gratification to go ahead with the free and independent Sudan in the footsteps of India".

Friendly contacts were made with the three States of Indo-China—Laos, Cambodia and the Democratic Republic of Viet Nam. In March came to Delhi, Prince Norodom Sihanouk, now Prime Minister of Cambodia, to pay "the tribute of our friendly gratitude for the noble part played by India in the restoration of Cambodia as a sovereign State". He was followed in April by the Deputy Prime Minister and Foreign Minister of the Democratic Republic of Viet Nam, Mr. Pham Van Dong. In September came the Crown Prince of Laos, accompanied by the Prime Minister, Mr. Katay Sasorith. The leaders of the three Indo-China States, with different political systems, pledged themselves to Pancha-sila, the five principles of co-existence.

Indeed, Pancha-sila won many adherents in 1955. The five principles were incorporated in the Bandung Declaration made by twenty-nine Asian-African countries after their historic meeting in April. They were accepted by Yugoslavia, Egypt, Saudi Arabia, Nepal, Cambodia, Laos and the Democratic Republic of Viet Nam. They were accepted by the Government of the Soviet Union. They were praised by Mr. Justice William O. Douglas of the U.S. Supreme Court, who told a Calcutta audience in July that America was "moving towards the acceptance of the principles of co-existence . . . . There is nothing to argue about it. It is the only way out".

It was the historic visit of Mr. Bulganin and Mr. Khrushchev, towards the end of the year, that attracted worldwide attention. For the first time a Soviet Prime Minister and a First Secretary of the Soviet Communist Party set their foot on the soil of a country pledged to constitutional democracy. The visit brought about greater understanding and friendship between two neighbours and opened a fruitful era of economic cooperation.

Prime Minister U. Nu of Burma

In their speeches, the Soviet leaders praised India's peaceful policies at home and abroad, her contributions towards lessening world tensions, and the independence of her outlook. On their own part, they made certain policy statements of worldwide significance. They renounced war, declared that the U.S.S.R. would not be the first country to use the atomic or hydrogen bomb, that Communism was not for export, that the Soviet Union had no desire to impose its own system on any country and that it was interested in peaceful competition with the other world powers in the task of making this globe a happier human abode. They denounced colonialism including Partuguese colonialism in Goa—as President Tito had done eleven months ago—and spoke in support of India's stand on Kashmir.

India was happy to have the U.S.S.R. as a friend and a partner in the worldwide co-operative endeavour to bring peace to the world. As Mr. Nehru said in a speech in Madras, during the Soviet leaders' visit to the city, "The welcome that our Soviet guests have received in India has alarmed some of our friends . . . I have often said we do not propose to join any camp or alliance. This is our basic policy. But we wish to co-operate with all in quest of peace and security and human betterment . . . It is in no spirit of pride or arrogance that we pursue our own independent foreign policy. We could not do otherwise unless we are false to everything India has stood for in the past and stands for today. We welcome association and friendship with all and the flow of thought and ideas of all kinds, but we reserve the right to choose our path. That is the essence of Pancha-sila."

☆

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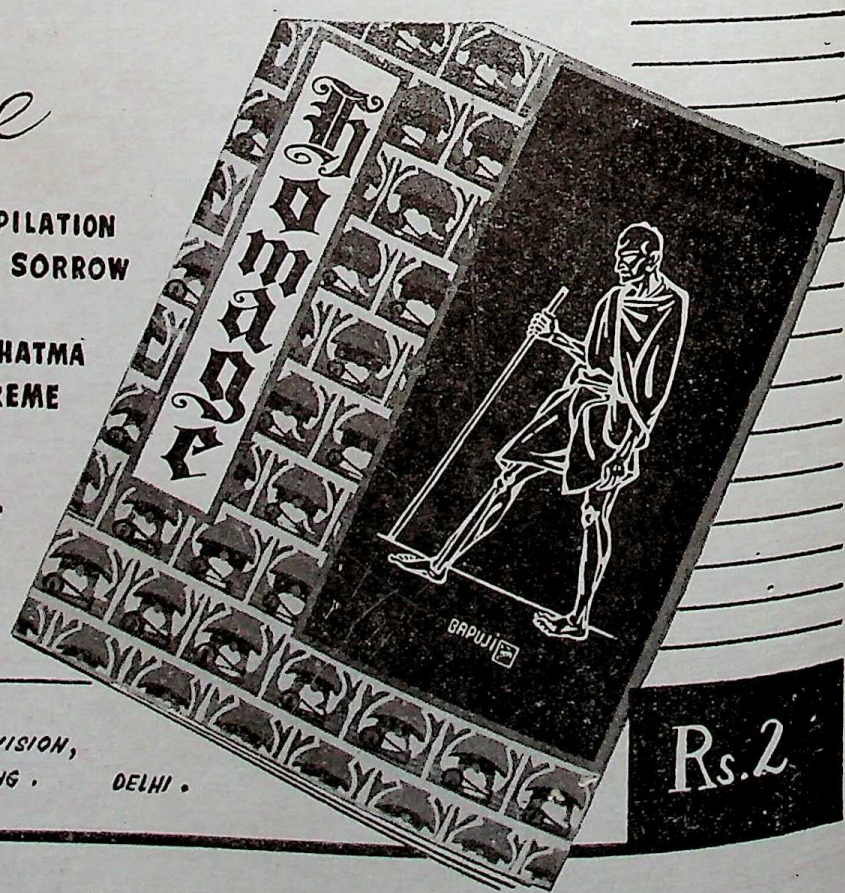

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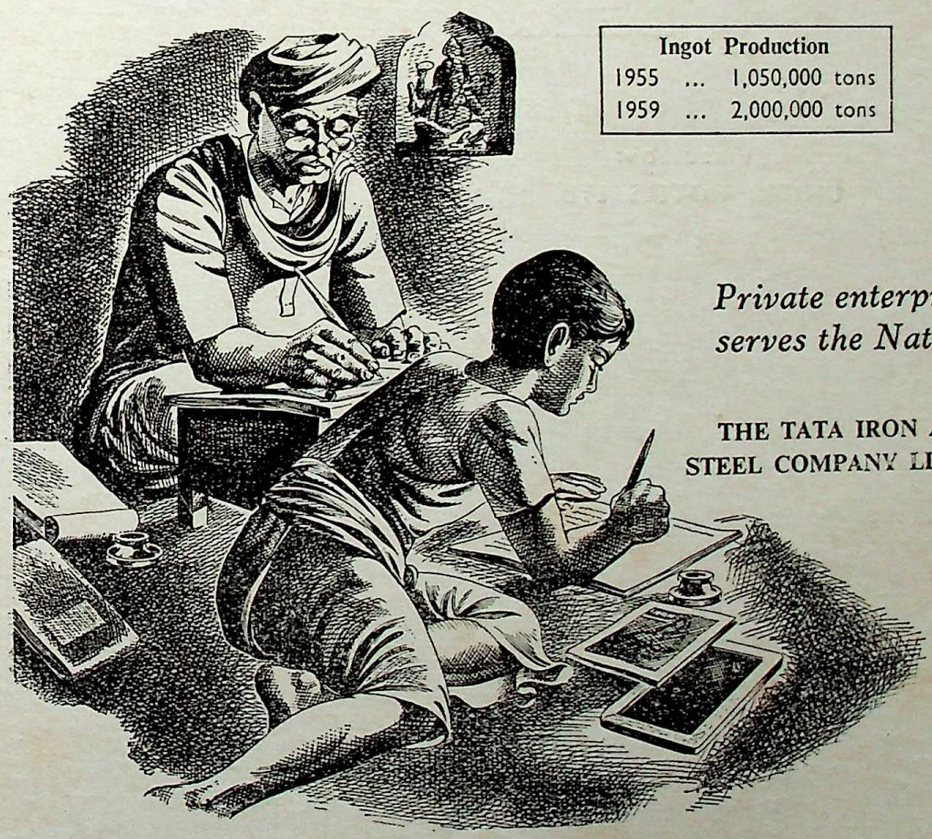

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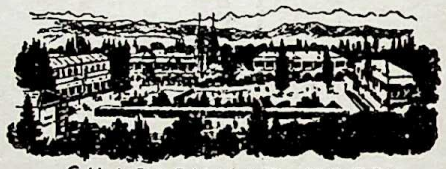

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The MARCH OF INDIA

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In this issue - - -

K. Iswara Dutt	INDIAN NATIONAL EVOLUTION—II	5
P. S. Rao	TOWARDS FLOOD CONTROL	10
P. N. Mohandas	TWO THOUSAND YEARS OF INDIAN COINAGE ..	15
Suresh Asthana	SOCIAL SECURITY IN INDIA	19
Suniti Kumar Chatterji	FOOD IN INDIA	23
J. Kolangaden	TATTVA BODHAKAR	29
Muriel Wasi	THE SECOND INTER-UNIVERSITY YOUTH FESTIVAL	34
Padmini Sen Gupta	THE TEXTILES OF MANIPUR	37
J. Vijayatunga	NATIONAL DANCE FESTIVAL	39
Ruskin Bond	THE COCONUT (A SHORT STORY)	43
Victor Rosner	TRIBALS AND THE FIRMAMENT	45
	BOOK REVIEWS	49
	OUR CONTRIBUTORS	49

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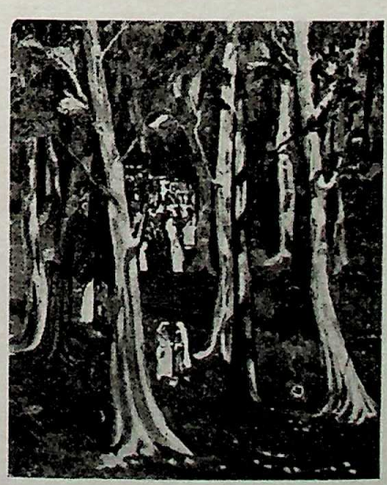

The painting on the cover by our Staff Artist, J. Bhattacharjee, throws light on the community life in Coorg, a beauty spot in India. The tall trees and steep picturesque slopes of the hills are always a source of inspiration to the people. The painting presents a true picture of this land of Kodavas.

Illustrated articles, short stories, and features of topical interest or cultural value are invited. All editorial correspondence should be addressed to the Editor, *The March of India*, Publications Division, Old Secretariat, Delhi. Contributions are paid for at our usual rates. The Editor does not hold himself responsible for the views expressed by the contributors.

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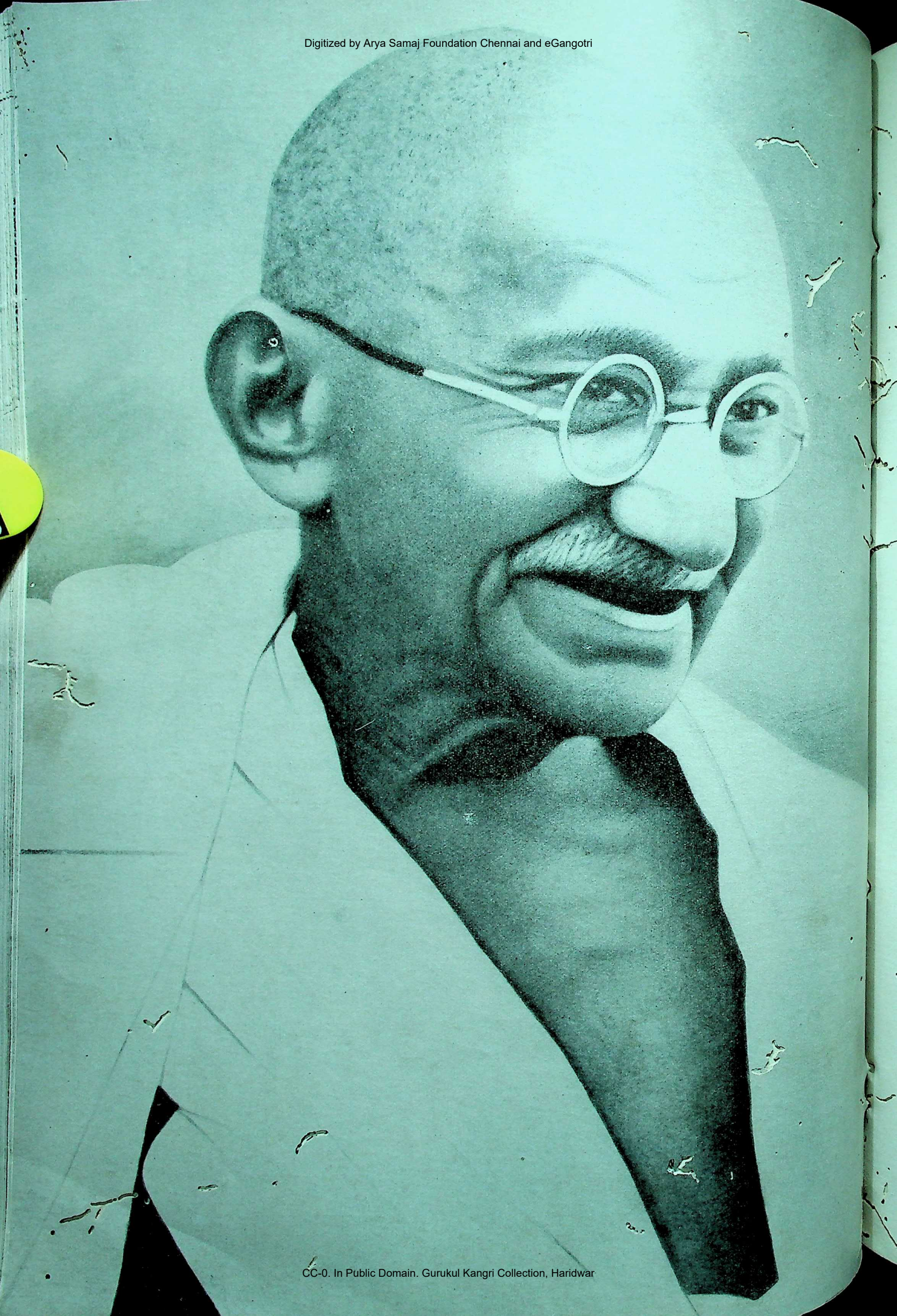

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Indian National Evolution-II

Giants of The Gandhian Era

K. Iswara Dutt

BETWEEN 1906 when the venerable Dadabhai Naoroji raised the cry of Swaraj (thus reconciling Liberalism associated with him, Ranade, Mehta and Gokhale and the political idealism represented by Tilak, Lajpat Rai, Bepin Chandra Pal and Aurobindo) and 1919 when the Mahatma arrived on the scene and released new forces for the liberation of India, History took swift and precipitous turns both at home and abroad. If in the intervening years the first Great War rocked the nations of the earth and brought in its wake a world-wide demand for the survival and safety of Democracy, in India, nationai aspirations for self-government reached a new stage, indissolubly bound up with the memory of a celebrated woman-warrior of both the pen and the tongue. Dr. Annie Besant's unqualified opposition to the Gandhian philosophy should not in any way blind us to the significance of her own role in history and the impact of her many-sided personality on the public mind.

Irish by birth and Indian by adoption, the first woman to preside over the Congress,....and one of the greatest women of all times....Dr. Besant roused the national consciousness of Indians first by her religious gospel and then by her political crusade. As a girl of seven she recited Milton's 'Paradise Lost' while swinging in a cradle; as a young woman she fought alongside Braudlaugh a great campaign; later she launched Bernard Shaw in literary life, while as a Theosophist she led a world movement. A powerful writer, a superb orator, and a born organiser, she made the dead bones in the Indian political valley instinct with life and planted the national banner on mountain-tops. Editor of fourteen papers and contributor to each of them, and a speaker that knew no rest, she was, even in her eighties, a dynamo in action. India owes much to her, and she lit in our national life many a fire to which no extinguisher could be applied. Among persons whom she inspired were men like Dr. Arundale and Mr. B. P. Wadia who had the privilege of being interned with her, and Sir S. Subramania Iyer, who, after retirement from the Madras Bench, surrendered his knighthood and wrote a famous letter to President Wilson, in the cause of India. Incidentally the versatile Dr. C. P. Ramaswami Aiyar was one of Dr. Besant's excellent discoveries and staunch political associates.

Among Dr. Besant's contemporaries, and with the solitary, if inevitable, exception of Gandhiji, there was no Indian leader, with a longer record of public service or a greater patriarchal pre-eminence than the Pandit of Prayag. Pandit Madan Mohan Malaviya was a host in himself. In his twenties he left an abiding impression on the Congress; in his thirties he distinguished himself in the triple capacity of teacher, lawyer and journalist; in his forties he dominated the legislatures and presided over the Congress; in his fifties he built single-handed the Hindu University at Banaras and presided over the Congress for a second time; in his sixties, he faced the rigours of incarceration and organised the Hindu community, and in his seventies he persuaded himelf to leave for England to attend the Round Table Conference. Later, even when he was bent by advancing years he retained the optimism of youth. He was often on the losing side; sometimes perhaps on the wrong side but never on the side of wrong. A lifelong Congressman grown grey in the service of India and a devout Hindu steeped in ancient lore, Pandit Malaviya was so universally respected for his political probity and personal purity as to be hailed as 'the central sun of Hindustan'.

If Gokhale was Gandhiji's '*guru*' in a spiritual sense, V. S. Srinivasa Sastri was the former's gift to India. The efflorescence of the former Headmaster of the Triplicane High School into a Right Honourable gentleman is one of the romances of Indian public life. He represented India at several international conferences, enthralled the most cultured circles in the English-speaking world by his matchless eloquence, and won the freedom of the City of London. As Gokhale's successor and Gandhi's friend, as India's cultural ambassador and the Empire's silver-tongued orator, Sastri won fame and made history. All over the world he was received as a 'humanitarian agent who combined the breadth of a statesman with the depth of a scholar, and the fervour of an evangelist' and was as much respected for his character as admired for his calibre. The 'Nation and Athenaeum' claimed him as a representative of all that is best in Indian national aspirations,....'Gandhi's equal in unchallengable purity of motive and immeasurably his superior in practical wisdom'. Even in his retirement he was widely sought after, as the one man no word of whose to Gandhi went unheeded.

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In the twenties of the century there were two other redoubtable men from the South whose Presidential association with the Congress was a landmark in Indian politics—Mr. C. Vijayaraghavachariar, the Grand Old Man of Madras and Mr. S. Srinivasa Iyengar, once the leader of the Madras bar. C. Vijyaraghavachariar, the hero of Salem riots and one of the stalwarts of Indian public life, enjoyed a great reputation for unyielding independence and incisive logic. He was one of our greatest constitutional pundits. He presided over the Nagpur Congress in 1920 and the Unity Conference in 1932. Till he drew his last breath he retained great enthusiasm for political and constitutional problems and commanded a respectful hearing. 'A really great man', Montagu called him, and rated him high as an astute and independent thinker.

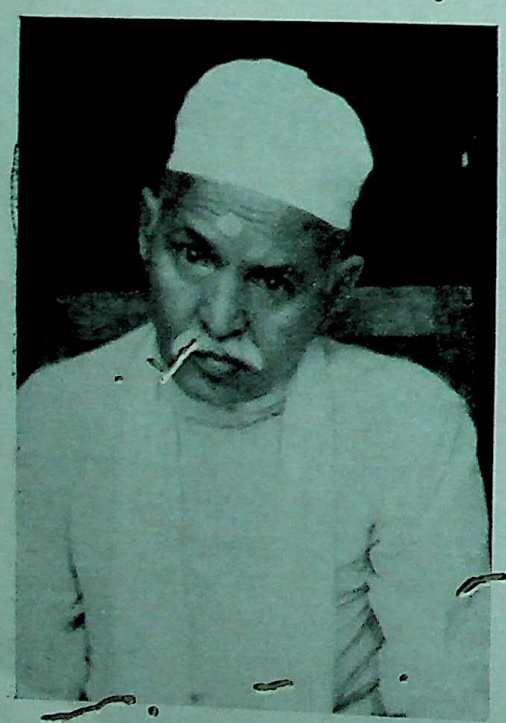
Deputy Leader of the Swaraj Party in the Assembly and President of the Gauhati Congress, Srinivasa Iyengar was an adroit and formidable party leader. His mind worked in brilliant flashes. In politics he was nothing if not dynamic. He crossed swords with Motilal inside the party, and with Gandhi inside the Congress. As an original thinker, he commanded a hearing. And, in the main, he reminds one of Lord Buckmaster—'brilliant, impetuous, learned, a little wayward, a little too sure of himself and in some of his impulses almost like a child.'

The Gandhian scene was conspicuous by the presence of some Muslim stalwarts, the foremost among them being the Ali Brothers—the two greatest brothers in our recent history, not excluding the Patel brothers. They were in the grip of the same idea and worked in unison till death parted them. Shaukat Ali seemed to have no politics of his own, and if he had any, he always relied on his younger brother's text and direction. In the days of the Khilafat agitation and Hindu-Muslim fraternity, Shaukat Ali, with his breeziness and swagger, had his own way of dealing with the crowds that Gandhi drew to his embarrassment. Mohammed Ali had his triumphs in the intellectual domain. Brilliance was, so to say, his handicap, for he was far too brilliant. A great journalist and speaker, he had a wonderful command of the English language which was a supple instrument in his hands. He was famous for his lively phrases and sparkling epigrams. A passionate believer in freedom, his vision was ostentatiously Pan-Islamic, and he was, in the Congress politics of the day, an uncertain customer. By his side, one was always on the edge of a volcano which might explode any moment. With his love for piquant situations, there was something dramatic in him, and even his last famous utterance at the Round Table Conference was shrouded in drama.

One was much happier in the company of Hakim Ajmal Khan who presided over the Ahmedabad Congress and delivered the shortest address which was about 5 pages as against Mohamed Ali's longest, which was 127 pages solid matter—solid in substance and rhetoric alike. The Hakim Saheb was one of Nature's great gentlemen and an embodiment of Hindu-Muslim unity. So was Dr. Ansari, an Indian first and a Muslim next. A doctor by profession, his interests ranged far and wide. A lifelong Congressman, he was no narrow-minded doctrinaire, and he was a Nationalist in the truest sense of the term. His distinguished appearance, his noble bearing, his unimpeachable dignity, his innate courtesy, his personal refinement and his disinterested work in the country's cause, marked him out as one of the finest products of Muslim culture. He presided over the Madras Congress in 1927 when the cry of independence was first raised, and later enabled the Congress to return to parliamentary activities.

Among those whom Gandhiji won over by a kind of magic spell, C. R. Das and Motilal Nehru were easily the most attractive as well as distinguished. *Chittaranjan Das,* as Birkenhead admitted, was a vivid, arresting and versatile personality. Neither his devotees nor detractors questioned 'the intense since-

Pandit Madan Mohan Malaviya



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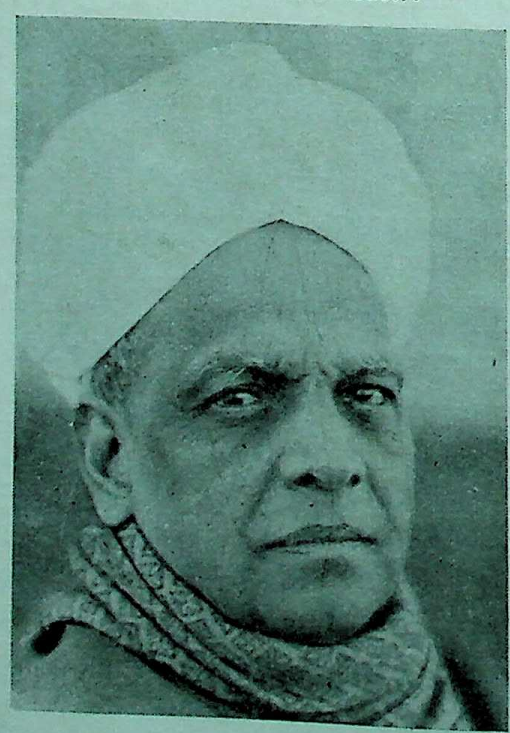

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Pandit Motilal Nehru

Subhas Chandra Bose

Satya Murthy

rity with which he flung himself into the causes in which he believed, still less the grave and sustained sacrifices which he made without counting the cost on their behalf'. He first made his name by the 'celebrated, poetically inspired and romantic peroration' in Aurobindo's trial and later fostered the extremist element in Bengal to which he was drawn by his Vaishnavite philosophy. In his Roman toga he was imposing, and his profile was suggestive of Napoleon's. He was really one of those men 'whose vision covered the whole horizon and whose feet filled the whole earth.' Indian public life knew no greater philanthropist nor any who more completely effaced himself by true renunciation. A born fighter, he put the premium on the ends, not on the means. He had something of the revolutionary's reckless disregard of consequences, something of Tilak's political acumen and also something of the Mahatma's idealism and spirit of renunciation. In Mrs. Naidu's inimitable words "the whole being of this kingliest of dreamers was a Vaishnavite rhapsody of incomparable passion for the liberty of his Motherland." Birkenhead said of Carson: 'No man has ever in the history of Irish politics flung all his powers, all his eloquence, and all his health more recklessly into the cause in which he passionately believed than Carson.' Substitute the words 'Irish' with 'Indian', 'health' with 'wealth' and 'Carson' with 'Das'....and you have a splendid picture of Das.

Though his active ally in later years, Motilal Nehru was structurally and fundamentally different from Das, in mind and in training. If Das was every inch of his being an Indian, Motilal was, except for his blood, like a typical Englishman of the West-End. The astutest politician of his time with a flair for cabinet politics, Motilal died a victim to the conflict between the head and the heart. Hardly able to locate himself between the Mahatma with his philosophy and Jawaharlal with his ideology, he found himself stampeded into courses which were not of his deliberate choice, and died, they say, rather a broken-hearted man. He was the most regal of our politicians—proud, dominating, Olympian. Was it not Slocombe who said that 'his proud profile, his thick silvery hair, his delicate hands, were those of a Prince of the Roman Church?' Like Lord Rosebery 'he drank freely, but always very delicately of the pleasure of life.' Where Motilal sat, there was the king of the table, whether in the political or social sphere. At Anand Bhavan he lived in a blaze of glory—and once the hub of social life, it was later the Whitehall of Congress India. His legacy is a priceless national asset.

Besides Das and Motilal, there were three others who invested the Swaraj Party with authority and made it a power in the councils of the nation. One was Vithalbhai Patel, familiarly known as V. J. Patel, brother of the well-known Sardar, and his senior in life and politics. The legislative councils had known no more resourceful politician or pugnacious fighter. Montagu called him 'the most talkative member of any council in India', and Meston spoke of his 'genius for mischief'. Gandhi confessed that, given the most perfect constitution in the world, Vithalbhai Patel could wreck it in a trice. It was a sad day for the bureaucracy when he was made the Speaker of the Assembly. Alone he gave it more trouble than the whole Swaraj Party—and it breathed a sigh of relief when he reluctantly resigned. In the atmosphere of party politics, V. J. Patel was 'natural mutineer'. The other man who was one of the prime-builders of the Swaraj Party was A Rangaswami Iyengar, the famous editor of the *Hindu*. A close student of public affairs, an authority on finance and constitution, a politician who combined ardour and knowledge, shrewdness and wisdom, a man of generous impulses, he was the right hand of Das and Nehru, the brain of the Swaraj Party, and later the Mahatma's secretary and constitutional adviser at the Round Table Conference. His mind was one of the finest working instruments in Congress

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Sardar Vallabhbhai Patel

politics for long years. Satyamurthi was the 'loud-speaker' of the Congress. One of the best orators in India, he could adjust himself equally well to the Assembly Chamber and the Madras Beach, to the Rotary Club as well as the Gokhale Hall. The legislatures in India have not known a more industrious or 'troublesome' member for he could set the entire secretariat working by his supplementary questions alone. Never afraid to take up unpopular causes he was the first to launch the campaign for office acceptance. He was a tenacious and fearless fighter, a hard-headed realist and a sturdy champion of the people's rights. He was the most active and irrepresible politician of his day and he was the one man who could in conducting a fight in the councils, create the atmosphere of a battlefield.

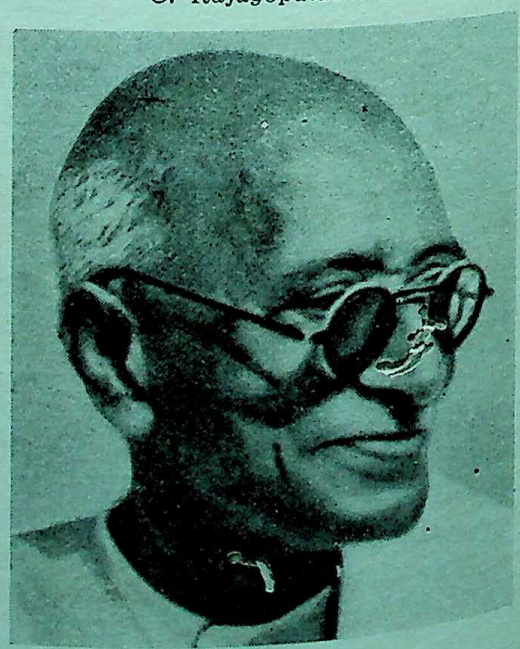
For 'a will, despotic in its dictates, an energy that distanced expedition, and a conscience pliable to every touch of interest', there was none, within recent times in India, comparable to Subash Chandra Bose. Discovery of Das and darling of Bengal, he made glittering sacrifices and underwent untold suffering at Freedom's call. On the death of Das, the last of Bengal's political giants, Bose had a tug-of-war with Sen-Gupta and was routed. Inside the Congress he ran a race with Jawaharlal and was again routed. From his sick-bed in Switzerland, having exhorted India to get rid of Gandhi and choose his successor, he sought the Congress crown at Haripura and offered incense at the Wardha altar. Having got it, he rebelled against Gandhi and his group. At Tripuri he had won and had even joined hands with Huq. For sometime he was the victim of his obsessions, the plaything of fate, and the supreme 'gambler' in politics. Behind the prison walls, he was like Napoleon at St. Elba, musing how 'ambition, if it could raise a man to the highest, could also hurl him down to the lowest'. Then came his most dramatic escape and most daring feat. 'Somewhere' playing for the highest stakes, and casting his net in the stormiest waters, he rose like a Titan—and disappeared. As Charles Phillips said of Napoleon in a great oration, 'his fall, like his life, baffled all speculation'. Netaji, the later-day name by which he was familiarly known, became a battle-cry. His memory will survive in the history of Freedom's Struggle as one of India's Grand Rebels.

We have so far dealt with men of varying shades of eminence now we shall touch real greatness. The Mahatma's chosen men are all again of about the same stature, similar features, like traits, but he is apart and above....a lone star pointing the path to the pilgrims to a new world where truth prevails, non-violence reigns supreme, and *Dharma* has its sovereign sway, where no lawyers have vocation and no policemen raise their batons, where wine does not flow and woman does not use cosmetics, where the lion and the lamb drink out of the same spring, where no tyrant has any occupation nor any dictator territorial ambition.

For the general run of mankind this may be an Utopia, but no dreamland this to the man who had, in his own way, translated dreams into deeds. Approach the Mahatma from any angle....and a most unusual man was he. There was in him a strange blend of Mazzini's fire and Tolstoy's faith. He was, indeed, so complex and so simple, so rigid and so flexible, so easy to understand and so difficult to follow, so consistent in his philosophy and so inconsistent in his actions, that he was one of the most extraordinary men of all times whose character baffles speculation and defies analysis.

To him, in his inimitable phraseology, 'God's ways were more than man's arithmetic', and of all his qualities there was none greater than his 'living faith in God'. His days of silence were days of dedication to the Unseen (but to him not the Unknown) Power: his fasts were penances and his prayers were, significantly enough, not in 'the softly lighted glades of the silent forest', but in the thickly populated areas of the bustling town or city. Life to him was an endless series of experiments which he treated as a challenge to his own moral conscience and spiritual faith. Every test that he so manfully stood, since the days of the South

C. Rajagopalachari



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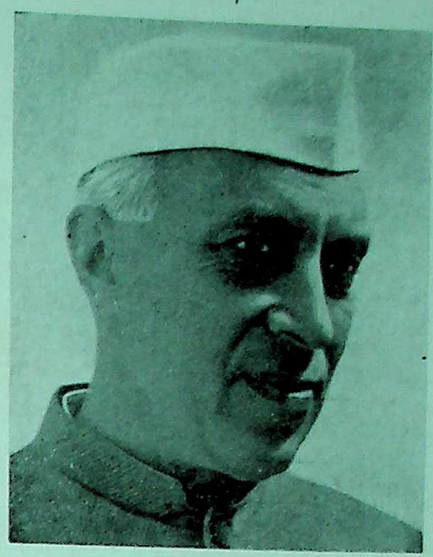
African struggle, increased his faith till it became infallible....and he invincible. Confronted with racial arrogance in South Africa he initiated Passive Resistance; moved by the Punjab tragedy he sponsored Satyagraha, provoked by the Bureaucracy he started Non-voilent Non-co-operation; Challenged by British Imperialism he embarked on Civil Disobedience; and slowly it dawned as much on his opponents as on his friends that passive Resistance, Satyagraha, Non-violent Non-co-operation and Civil Disobedience were but variations of the same theme. A moral Colossus was up in arms—and paradoxically enough without them—against organised systems entrenched in injustice, if not evil, always overcoming them against insuperable odds, and investing in the process, hitherto obscure places with historic importance. Champaran, Bardoli, Dandi and Noakhali became landmarks in our history even as the places of his retreat—Sabarmati and Sevagram—became places of pilgrimage.

His experiments with Truth and pursuit of Non-Violence, his prescription of the *charkha* and *khadi*, his revival of village industries and crusade against drink, his concern for Harijan uplift and the emancipation of women—all these were of the same mental texture though of different tints and they bore the unmistakable stamp of the saint who had no use for mere abstractions. Apostle of Ahimsa, Prophet of Satyagraha, Votary of Truth, Embodiment of Love, Father of the Indian Nation, Teacher of Humanity, Saint, Statesman and Saviour, Man of the Ages—the Mahatma, who was a guide to us in the past, will be an ever abiding inspiration to us and the future generations, for 'the influence which emanated from his personality, as Rabindranath Tagore characteristically said, 'was ineffable, like music, like beauty'. That influence will last.

* * * *

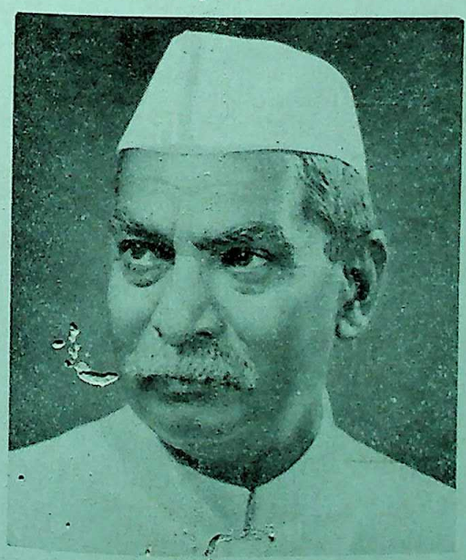
Of the men around Gandhiji—those discovered and inspired, and moulded and built by him, it is a trifle difficult to speak for they are, in a sense, too near the scene. Yet they were so much a part of the historical phase that more than a passing reference is warranted by their solid and striking contribution to the national evolution. Sardar Vallabhbhai Patel was Gujerat's gift to Gandhiji and Gandhiji's gift to India. The hero of Bardoli, Patel was, before the advent of Freedom, the Fuehrer of the Congress and the Mahatma's 'nasmyth hammer' while later he rose to Bismarckian heights as the consolidator of Independent India. Dr. Rajendra Prasad, the honoured President of the Republic, is the staunchest Gandhite in whose moral earnestness and fervour Gandhism found its truest expression. If Rajendra Babu is the soul of Gandhism Sri C. Rajagopalachari is its brain and its most authentic exponent who, by his intellectual incandescence, moral idealism and rare political acumen, excelled in strategy and statecraft and has since commanded attention as the nation's foremost elder statesman. Perhaps in no other individual who had grown under the very shadow of the Mahatma has the Gandhian light shone more resplendent since, than in Acharya Vinoba Bhave who has, by treading forlorn furrows across the Indian landscape inaugurated an agrarian revolution in true Gandhian style.

To talk of Indian Revolution or of Indian Freedom or of Indian regeneration without a specific and elaborate reference to Jawaharlal Nehru is to talk of the solar system without reference to the Sun. Gandhiji's main prop in Freedom's fight, the first and foremost in India to have made the country truly international minded, Prime Minister of India, who has given us security at home and prestige abroad, and the prime-architect of post-Gandhi India which is still in the making, Nehru has already taken his place in history as India's Man of Destiny and the leading evangelist of international peace. 'A frame of adamant, a soul of fire', and on the personal side a man of irresistible charm, and 'the theme of honour's tongue', Mr. Nehru today stands alone, almost isolated grandeur.



Jawaharlal Nehru

Dr. Rajendra Prasad



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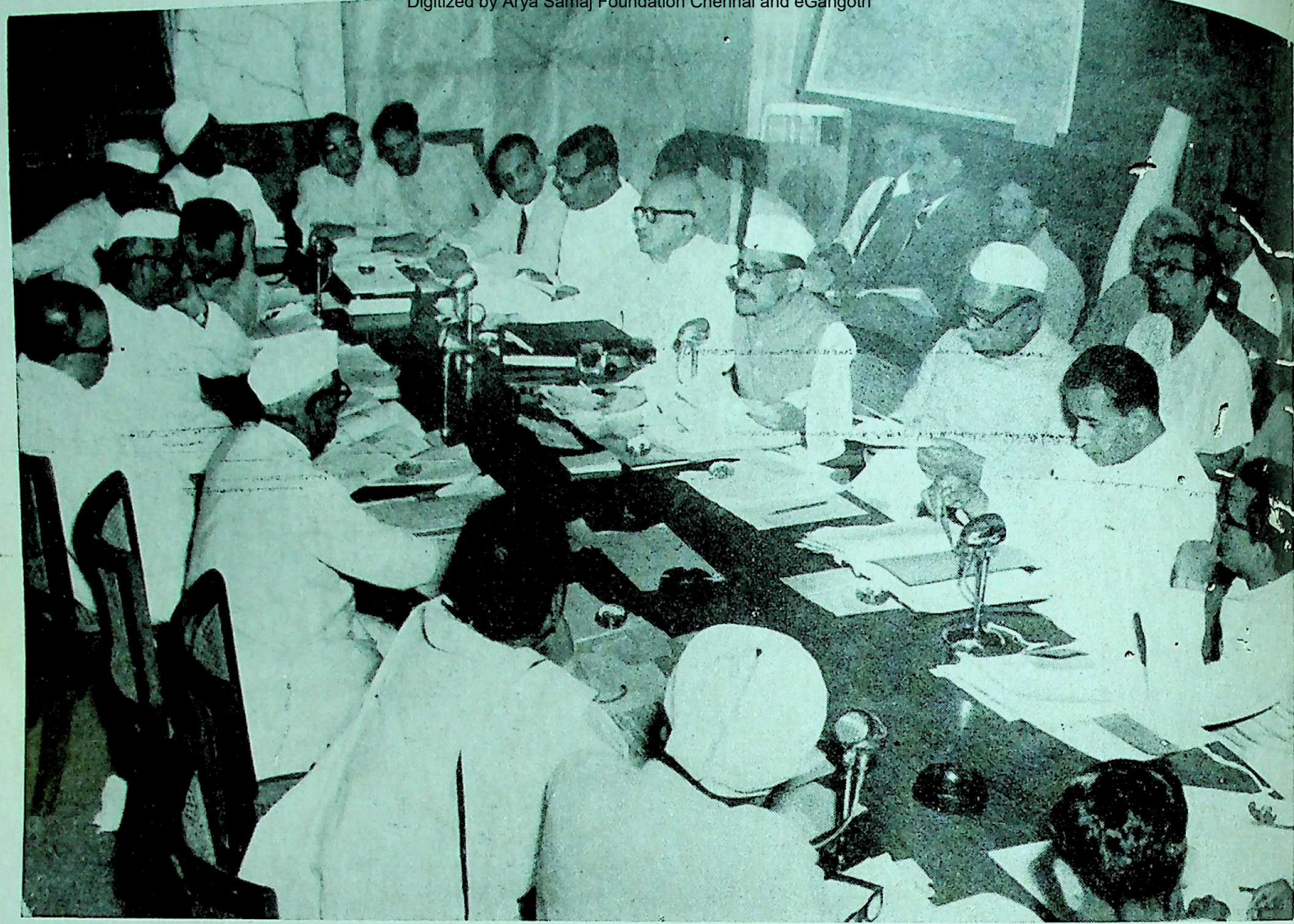

Shri Gulzarilal Nanda, Union Minister for Irrigation and Power, addressing a meeting of the Central Flood Control Board

Towards Flood Control

P. S. Rao

THE problem of floods is an age-old one. They simply came to be tolerated as natural calamities and to alleviate the distress of the people, some palliative measures were taken such as the granting of gratuities and undertaking of some relief measures. Any schemes for flood control were ruled out on account of their exorbitant cost. After independence, however, there was a new awareness in the country to solve the problem of floods.

The floods of 1954 were the most extensive and pointed to the need of having co-ordinated measures to control floods on an all-India basis. As a result, a programme was evolved for combating this menace and several essential steps were taken immediately.

Flood Control Boards were set up at the Centre and in the States which are affected by floods. The State Boards are assisted on technical matters by Technical Advisory Committees. Four River Commissions were also constituted for the Ganga, Brahmaputra and the North-West River and Central India River systems. The Central Water and Power Commission's organisation was suitably strengthened to co-ordinate all flood control work and assist in drawing up an integrated plan.

After the necessary machinery was set up, designs for emergent works were promptly prepared and checked on models, with the object of completing such works before the following flood season. Construction had to be undertaken under the most difficult conditions. There was shortage of labour and transport; and the position was aggravated by dislocation of the communication system both by road and rail, as a result of the damages caused by floods in 1954.

It was only through the unstinted efforts of one and all, the engineers as well as workers who toiled day and night, that what appeared to be a well-nigh

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impossible task could be accomplished. Public co-operation played no small part in this mighty effort. This is an achievement of which the nation can justly be proud.

As in 1954, the floods in 1955 were widespread, although the situation in Assam, West Bengal, Bihar and Uttar Pradesh was not so acute as in 1954. Andhra, Orissa, Pepsu and the Punjab were visited by damaging floods, particularly Orissa and the Punjab.

The 1955 floods in Uttar Pradesh showed that even small rivers like the Tons and the Gomti, which rise in the plains of eastern districts, can create devastation on account of heavy local rainfall. These floods have also pointed to the necessity of solving effectively the drainage problem in flooded areas. On the whole the protective works completed in 1954 have withstood the 1955 floods very well.

Though it is physically impossible to provide cent per cent protection against floods, any measures to control them will have to conform to the local conditions and afford appreciable protection at reasonable cost. The aim of all flood control and protection works is to minimise or prevent the losses that are generally caused by floods.

The remedial measures generally adopted consist of embankments, storage reservoirs, preferably on the tributaries, detention basins, diversion of the water of one river into another, increasing the slope of the river by cutting down loops, dredging and channelling portions of the river and local protection works such as revetments and spurs to safeguard particular areas exposed to the danger of erosion.

The measures adopted during 1954-55, consisted mainly of embankments, revetments and spurs.

Assam

The major flood protection works undertaken by the Government of Assam during 1954-55 consisted of Dibrugarh Town Protection Scheme costing nearly Rs. 16.2 million, temporary protection of Palasbari Town and the protection of Sualkuchi. An expenditure of nearly Rs. 17.5 million was incurred up to the end of June 1955. The construction of embankments along the Brahmaputra and other rivers was also carried out.

Just a year ago, Assam presented a sad picture of gloom and despair. During the 1954 floods, an area of 5,400 acres of valuable town land was eroded at Dibrugarh, resulting in considerable loss to Government and private property and dislocating 3,900 people. But Dibrugarh town was saved this heavy loss of life and property when there were floods again the next year as a result of the various protective works that had been built in the area. The temporary protection works built at Palasbari also proved successful.

The Sualkuchi protection works have effectively served the purpose for which they were constructed.

Though the Brahmaputra level at Dibrugarh was 1.2 feet higher than the high flood level of 1954, at Gauhati only half a foot lower and at Dhubri the same as in 1954, the area subjected to flooding in 1955 was roughly computed at 5,400 sq. miles against 12,000 sq. miles in 1954. This reduction in the flooded area was partly due to the 1955 floods being of shorter duration but primarily due to protection afforded by the dykes constructed during the previous working season. But for these embankments an area of about 1,750 sq. miles would have been flooded resulting in a loss of about Rs. 10 million.

West Bengal

In North Bengal, works for the protection of seven important urban and rural areas, namely Jalpaiguri, Barnes-Domohani, Cooch-Behar, Alipurduar, Mathabanga, Siliguri and Phansidewa were undertaken in 1954-55 on an emergent basis. The first phase of these schemes, costing nearly Rs. 20 million, was taken up for execution and a sum of Rs. 9.16 million had been spent up to the end of June 1955.

The floods of 1954 dislocated and paralysed the normal activities in Jalpaiguri for about 52 days. Rural areas, nearly 10 sq. miles in extent, and riverine villages were threatened by inundation and sand deposits. The protection works built at Jalpaiguri successfully withstood the onslaught of the floods in 1955 and protected the area.

The town of Cooch Behar on the left bank of the Torsa, which is notorious for frequent changes in its course, was almost completely submerged and a number of houses were lost. The works carried out in 1954-55 have afforded the needed protection. The river Kaljani which caused flooding and erosion in 1954 at Alipurduar town, recorded a level one foot higher last year but no damage was caused on account of the protective works.

At Mathabhanga, 15 sq. miles of rural areas were saved from being inundated or eroded. The Siliguri town which owes its importance to its being the gateway to North Bengal and Assam stood in bad need of protection. The Mahananda river was causing erosion of the town since 1950 and was also threatening the safety of the National Highway Bridge connecting Siliguri and Jalpaiguri. The protective works completed have ensured the safety of this important bridge, thus keeping the communication system in operation and have at the same time helped in arresting erosion. The protection works executed at Phansidewa along the bank of the river Mahananda have satisfactorily checked erosion by floods along a stretch of about 1,800 feet.

On the river Teesta, also, all the works have stood well.

Bihar

Schemes costing approximately Rs. 40 million were taken up during 1954. These included embankments along the rivers Mahi, Gogra, Gandak, Burhi Gandak, Old Bagmati, Balan and Bainty, protection works for three towns, namely Chapra, Khagaria and Sitamarhi and desilting of channels on the Khirohi

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river. An expenditure of about Rs. 6.2 million was incurred on Works, till June 30, 1955.

Except for the breaches that occurred in the Rosera-Parihara embankment and three others, all the others stood well. Though the Gandak rose to record level, the marginal embankments on both sides of the river protected the region served by them. Except for a few minor breaches, the embankments in the Darbhanga District stood well. The erosion at Chapra Town was effectively checked by the groynes constructed there. Embankments raised along 235 miles have protected an area of about 1,000 sq. miles in this State.

The Kosi, fortunately, did not experience high floods. The flood banks constructed prevented the heavy inundation that usually occurred in the past in the upper reaches and consequently it has been possible to raise good crops of rice and jute in the protected areas, particularly in the northern parts of Purnea and Saharsa districts. Due to the construction of the Ring Bund at Nirmali, the town has been freed from inundation and it is regaining its previous prosperity. The marginal embankment along the Tiljuga though incomplete was holding up the spill and preventing inundation of the areas behind the embankment. The total cropped area benefited was of the order of 350,000 acres.

Uttar Pradesh

A number of emergent schemes valued at about Rs. 20 million were under execution during 1954-55 mainly consisting of embankments along the Gandak, the Ganga, the Ghagra, the Rapti and other smaller rivers and raising marooned village above the flood plane. The work to protect the city of Banaras was also taken up. The Ballia Baria bund along the Ganga and Chitauni bund along the Gandak were among the major embankment schemes executed according to schedule. The work on raising marooned villages in Basti, Gorakhpur and Deoria districts progressed appreciably and it was completed in more than 300 of the allotted villages. Nearly Rs. 7 million were spent on these schemes up to the end of June 1955. All the works withstood last year's floods successfully.

The Chitauni bund has prevented inundation of about 200 sq. miles, apart from saving the Chitauni railway line, which would otherwise have been washed away. The Ballia Baria bund on the Ganga which was

Building a bund in the Kosi Project area

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completed in the first ten miles gave protection to 15,000 acres, i.e., about one-third of the area to be benefited by this bund. The level of 400 village sites was raised in the Basti, Gorakhpur and Deoria districts, giving relief to a population of nearly 80,000 and gratuity and taccavi loans of about Rs. 150,000 were distributed and houses of the total value of some Rs. 6 million were saved.

Punjab and PEPSU

The principal scheme taken up in the Punjab during 1954-55 was the training and canalising of the Nasrala *Choe*. The discharge in the *choe* during last year's floods was of the order of 9,000 cusecs, more than the highest experienced in 1954. Never in the past has the first freshet of the monsoon been so large. The velocity of the flow was 12 to 13 feet per second. For three miles, the water flowed in a well defined channel and the embankments withstood the pressure successfully. The villages of Dagana Kalan, Hargarh, Fateh Garh, Niaria, Khalwana, Deowal and Hardowal situated on both banks of this *choe* were not affected by the floods.

Jammu and Kashmir

Protective measures in the Kashmir Valley include enlargement of the supplementary channel and strengthening of the Jhelum bunds above Srinagar. These works made satisfactory progress due to active co-operation of the people.

Steps are now being taken throughout India to initiate remedial measures on the points which have come to notice as a result of the experience during last year's floods.

The construction of additional protective spurs, revetments, etc., will be undertaken at Dibrugarh town. More embankments and drainage works will also be undertaken. Embankments will also be constructed along the Brahmaputra and other rivers along another 350 miles, besides strengthening the existing embankments. The protection of some other towns threatened by erosion will be ensured.

The construction of embankments for town protection works in North Bengal has created certain problems relating to the drainage of the towns, as the embankments cut across the natural lines of drainage. Suitable measures will be evolved for solving the problem of drainage congestion in the towns, before the next flood season. Some additional schemes for the protection of Ramshai area and some other rural areas along the rivers Kaljani, Raidak, etc., will also be undertaken.

The programme of constructing embankments in Bihar will be followed up, and steps will be taken to evolve a storage scheme. Last year's experience has indicated that the continuity of embankments is essential and that storage and detention schemes must be fully investigated to aid reduction of flood peaks. The tempo of work on the Kosi Project will also be increased when the construction of the Barrage is commenced.

In Uttar Pradesh, the survey of the Tons, the Sai and the Gomti will be conducted for formulating flood protection measures based on the knowledge gained last year. Extensive surveys will also be conducted to provide proper drainage for the water-logged areas. The security of some 400 villages in Basti, Gorakhpur and Deoria districts ensured by raising their level above the flood plane, has created a great demand for intensification of this type of protective measures; the level of a large number of other villages will, therefore, be raised. Construction of new marginal bunds along the Ghagra and other rivers will also be taken up.

The work of canalising *choes* in the district of Hoshiarpur in the Punjab has on the whole shown good progress and this work will be intensified and carried out in succeeding years. Other protective measures like the construction of some embankments and spurs are also proposed to be carried out.

The construction of an embankment along the Beas is proposed to be undertaken for affording permanent protection to threatened areas of Kapurthala district in PEPSU.

Andhra State suffers from periodical floods in the Godavari, the Krishna, the Pennar and some coastal rivers like the Budameru and Tammileru. Inundation in the coastal areas is also caused by the sea. No protective works of significance were carried out in 1954-55, but it is now proposed to execute the Budameru Reservoir and Diversion schemes and also construct the tidal banks in Godavari and Krishna estuaries.

Orissa had originally framed a limited programme for 1955-56, consisting of several minor embankment schemes, but consequent upon unprecedented floods of last year, further protective measures are proposed to be taken in the Brahmini and the Mahanadi basins which include the raising and strengthening of the existing embankments, the raising of the level of villages in low-lying areas, strengthening of protective works around Cuttack and the construction of protective works at Dalaighai.

Flood Warning

The floods in the Himalayan rivers flowing through the States of Assam, West Bengal, Bihar and Uttar Pradesh are due to heavy rainfall in the catchment areas of these rivers which lie within the neighbouring Himalayan countries. In order to mitigate the hardships arising from sudden floods, it is essential to get timely intimation of the floods from these countries for transmission to areas that are likely to be affected. The concerned countries were, therefore, approached to extend their co-operation in this direction.

The Government of China have responded to our request and have arranged to send advance information about floods in the upper reaches of the

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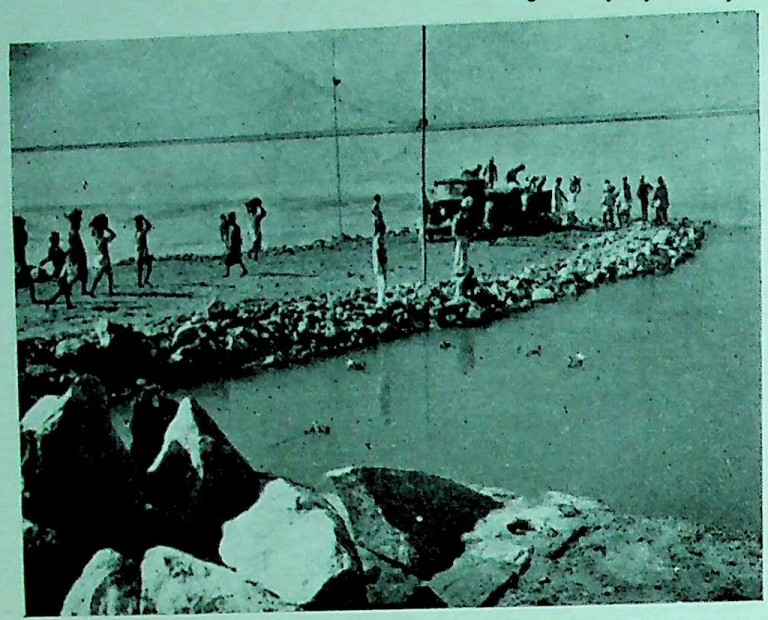

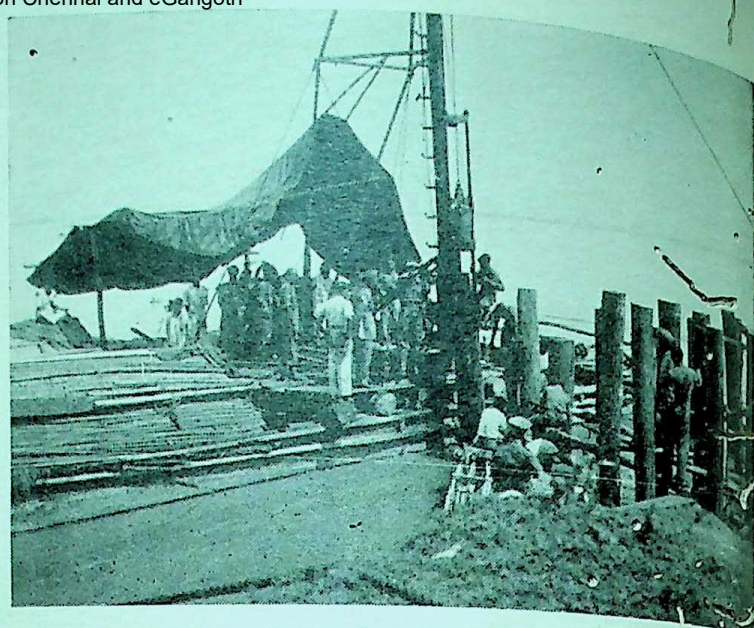

Construction of embankment and . . . . spurs to prevent erosion of the river bank at Dibrugarh

Brahmaputra in Tibet. They have been sending messages regarding rainfall and river discharge of the Brahmaputra in Tibet from Lhasa to the post and Telegraph Station at Darjeeling for onward transmission to the officers of the Central and State Governments at Gauhati, Shillong and Dibrugarh. These messages have been of considerable help in making people alert about the coming floods.

Four wireless stations are proposed to be set up in the Kosi Basin in Nepal. These stations will form a part of the integrated scheme of wirless stations which is being prepared. These proposals are under examination by the Kosi Administration.

Working agreements have been reached between the Governments of India and Bhutan for the installation of six wireless-cum-river-cum-raingauge stations to communicate messages during floods to the areas likely to be affected, namely, Dhubri in Assam and Jalpaiguri and Cooch-Behar in North Bengal. Two such stations have already been set up.

Wireless stations have also been set up within the State of Bihar in the upper reaches of the Gandak, Burhi Gandak, Bagmati and Kmala for issuing flood warning messages. These have been working since July 1955, and transmitting messages to Patna and to the local officers concerned.

Public Co-operation

When the First Five Year Plan was drawn up, stress was rightly laid on the role of Public Co-operation in national development, to enable individuals and groups to make maximum contribution in the implementation of the Plan.

A good beginning has been made in this direction. In the Kosi and North Bihar areas, Gram Panchayats have been doing work on a co-operative basis. People have also been eagerly coming forward to give a helping hand under the organisation of Bharat Sevak Samaj. Cultural facilities such as radio sets, newspapers, cinemas, etc. have been made available to the workers. The Auxiliary Cadet Corps was mobilised to do some part of the work on the Kosi Project. In Uttar Pradesh, the villagers themselves have been doing the major part of the work on raising the level of the villages affected by the floods. At Dibrugarh, in Assam, students were doing manual labour voluntarily in the construction of protective works. In the Punjab also, the villagers actively co-operated with the Government. Public co-operation played a vital role in the construction of the supplementary channel in the protective works undertaken by the State of Jammu and Kashmir. A labour strength of 15,000 was mobilised for this work under the scheme. Increasing participation by the people in the future plans will no doubt have results of far reaching value.

Second Five Year Plan

We are now on the threshold of the Second Five Year Plan. The first plan when drafted made no specific provision for flood control works as the machinery for integrated country-wide action in respect of flood control came into existence only after the 1954 floods.

Flood control projects proposed for inclusion in the Second Five Year Plan have already been broadly considered. Apart from the extension of embankments, town protection schemes, etc., the proposals include long range schemes like detention reservoirs, multi-purpose projects covering the flood control aspect. The demands of all the States will be duly considered and provided for. Priority in flood control schemes will generally be based on the criterion of favourable cost-benefit-ratios. No detailed designs and estimates have so far been prepared by the States for the various schemes. In the light of detailed investigations that will be carried out, it may be necessary to modify the schemes to meet specific situations.

Soil conservation which is accepted as an important

(*Continued on page 28*)

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Two Thousand Years of Indian Coinage

P. N. Mohandas

COINS are an important source of tracing a country's history. Their study has helped historians to confirm, revise or completely reject much of the historical data which had been established from sources like archaeology, epigraphy and literature. They have an important bearing on the political and economic conditions and religious and mythological faiths of a country. This is especially true of the old coins of India.

Our knowledge of the Indo-Bactrian Greeks, the Indo-Scythians, the Indo-Parthians, the Western Satraps and the Kushans is based mostly on coins. The date of the Kushan dynasty was revised after their coins were found. The religious faiths of the dynasties and of the people can be known from their coins. When we find the figure of Goddess Lakshmi on the coins of the Gupta Kings, we can conclude they were the worshippers of Vishnu.

Special coins are often issued by the Kings to commemorate political and military events. For example, we find the legend *'Gangaikonda Cholan'* on the coins of Rajendra of the Chola dynasty who ruled in the 11th century A.D. The legend means, "the Chola who has conquered the Ganga" and this proves the claim that Rajendra Chola had conquered the Gangetic valley.

The study of coins reveals to us the wealth and importance of ancient Kingdoms. When the coins of Gautamiputra Satakarni, the most illustrious of the Satavahana Kings, were found on the banks of the Krishna River, we could conclude that his dominions must have extended up to the Andhra territory. But the imporance of find-spots cannot be exaggerated. The presence of Roman gold coins on the coasts of Southern India did not mean that the Roman Empire had extended up to India. Roman coins found their way to India in payment of Indian goods. The same holds true in the case of finding Venetian ducats in India.

Coins also help us in determining the fauna and flora of a country. A series of plants and animals and birds are shown on ancient Indian coins. We find the figure of the Rhinoceros on some of the gold coins of Kumaragupta of the Gupta dynasty. This should tell us that the Gangetic valley abounded in this species of animal in the 6th century A.D.

The composition of the metal used for coins tells us of the economic conditions of a period. The purer the metal, the better are the conditions. If the times are bad, it leads to the debasing of coins. We find that the silver coins of Aurangzeb were inferior in metallic fineness to those of his predecessors as his reign was beset with continuous warfare and campaigns.

Coins also preserve for us the portraits of ancient kings. Among the best coins of the Gupta Kings is the one on which King Samudragupta is shown playing on the *veena* (harp). This throws light on one side of Samudragupta's character—his love for fine arts.

Gold, silver, and copper are the metals which have been used most commonly for coinage. But the use of other metals has not been unknown.

The Satavahanas, a dynsty of Southern India which ruled from about 232 B.C. to 237 A.D., used mostly lead. In addition, they used *Potin*, an alloy of copper, zinc, lead and silver. In Northern India, some of the dynasties used *Electrum*, a natural mixture of gold and silver. The Rajput dynasties of Northern India and the Sultans of Delhi used *Billon*, an alloy of silver and copper.

As the economic system grew more complex and complicated, the people felt the necessity of devising a common medium of exchange.

In the initial stages, an article of common use, such as shells, was used for exchanging goods in India, China and Africa.

Gradually people began to feel much inconvenience in using these articles. As the sphere of commerce became wider, the necessity for a common standard acceptable to all was increasingly felt. This led to the use of metals for coinage.

In the beginning, the metals were kept in their natural state. Later they came to be kept in lumps. In the West, in Asia Minor and Greece, the earliest coins were small ingots of metals with a punch. The earliest coins of China were of three kinds—spade money, knife money and ring money. The first two are peculiar as they are examples of coins made in the likeness of the primitive barter units which they resembled. They succeeded the currency of real spades and real knives.

In India, the beginning of coinage system was marked by the Punch-marked coins or *Puranas* as they

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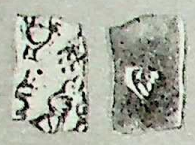
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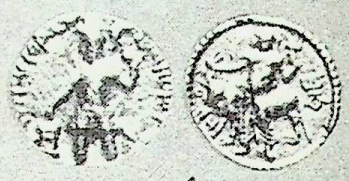
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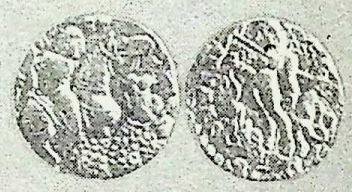
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are called in Indian literature. These are so known because of the peculiar method employed in making them. On a metal sheet were inscribed or punched the symbols with a peculiar device and the sheet was then cut according to weight and size.

The technique of coining money passed through many stages before the system of striking coins from dies was evolved. Now the double die-struck coins are in vogue.

Indian Weight Standards

In Northern Indian, the base of the metric system was the *Rati* seed (*Abrus Precatorius*) which weighs approximately 1.75 grains. The silver punch-marked coins of Northern India weigh 32 *Ratis* or 56 grains.

In Southern India, the monetary system was based upon the weights of two kinds of indigenous seeds, namely, the *Manjadi* (*Adenanthera Pavonina*) weighing about 5 grains and the *Kalanju* or Molucca bean (*Caesalpinia bonduc*) weighing 10 *Manjadis* or 50 grains.

The silver punch-marked coins of the South are equivalent to the *Kalanju* (50 grains) in weight and so are their gold *varahas* or Pagodas. The gold Fanam of Southern India—the smaller denomination of South Indian Coinage—is equivalent to the *manjadi* seed (5 grains).

The silver Rupee of Sher Shah is equivalent to 100 *Ratis*, that is, 175 grains. Thus the weight standard of the present Rupee which was an adaptation from Sher Shah's may be traced to the *Rati* weight of the Vedic times.

The question of the origin of Indian coinage has long been under dispute. But there is no doubt now that India had evolved its own coinage long before the Greek invasion.

The *Puranas* are the earliest money coined in India. These punch-marked coins were in circulation long before the beginning of the Christian era.

A rare type of these coins, called the *Satamana*, is a long bent bar of silver (Fig. 1). The date of the *Satamana* has been fixed approximately at 600 B.C. since Panini has mentioned these coins in his works.

An interesting feature of the punch-marked coins is that neither they bear any date nor the name of any king. We only find a number of symbols punched on the face of these coins. Among the symbols found are human figures, implements, arms like bows and arrows, animals, trees, branches, fruits, and impressions depicting solar and planetary worship.

Punch-marked coins were in use in Northern India from the earliest times to the beginning of the Christian era. In Southern India they continued to be in use for three centuries more. The earlier disappearance of these coins from Northern India must have been due to the influence of Greek coinage introduced by the Indo-Bactrian Greeks.

A South Indian type of punch-marked coin (Fig. 2) has on its reverse a crude design of the fish—the emblem of the Pandyan dynasty of early South Indian history.

North Indian Coins

The Indo-Bactrian Greeks who ruled in the Punjab in the last century before Christ introduced what is called the Portrait type of coinage, wherein the head or bust of the King is shown on the obverse. On the reverse is found a series of Greek deities. The legends on these coins are in two languages—Greek on the obverse and Kharoshthi on the reverse. The Indo-Greek coins are remarkable for the fine portraits shown on them and for the great number of names they give of rulers, otherwise unknown (Fig. 3).

In the middle of the 1st century A.D. the Kushans established a great empire in North West India. The coins of this period attained a high degree of skill and give an idea of the craftsmanship of the Indian artist. Greek deities were gradually replaced by Indian ones as shown in the coins of Vima Kadphises and Vasudeva, in the Buddha coins of Kadphises and Kanishka and in the typical Indian cross-legged position in which Vima Kadphises and Huvishka are shown on their coins.

The obverse of the Kushan coins shows the King sacrificing and on the reverse is found a series of deities of all relgions of the time, Greek, Roman, Zoarastrian, Hindu and Buddhist. On the reverse of Vasudeva's gold coin is found the figure of Siva accompanied by his bull (Fig. 4).

This type of coinage in which the King was shown on the obverse and the diety on the reverse was the most common adopted by many dynasties in Northern India.

The Gupta coins are worthy of special mention. The period of the Guptas which lasted roughly between 320 and 550 A.D. marks a period of great Hindu revival. During this period the system of coinage in India reached perfection. The Gupta coins are of great artistic merit. They are mainly of gold, although silver and copper coins were also issued.

There are many types and varieties of Gupta gold coins. Among the most notable of these are of Samudragupta, who is shown playing on the veena or performing the horse sacrifice and of Kumaragupta who is shown killing a rhinoceros. The reverse shows the figure of Goddess Lakshmi (Figs. 5, 6 and 7). Also for the first time, classical Sanskrit appears on the coins.

In mediaeval times, two types of coins were in vogue in Northern India. The silver coins of this period belong to "the bull and horseman" type. They have a seated bull on one side and a horseman on the other. The Rajput dynasties of Mediaeval India employed this type for their silver coins (Fig. 8). The seated goddess type was employed by these dynasties for their gold coins.

South Indian Coins

The South Indian coins are a class by themselves. The Satavahanas mostly used lead as material for

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their coinage. Next to lead, they used *Potin*, an alloy of silver and copper. Although the Satavahana coins are devoid of any beauty or artistic merit, they constitute a valuable source-material for the dynastic history of these Kings. They have on one side the figure of an elephant, horse, lion or a stupa. The other side shows the so-called Ujjain symbol—four circles at the end of the two crossing lines. This is a distinct dynastic symbol of the Satavahanas (Fig. 9).

The mediaeval dynasties of South India issued gold and copper coins, but rarely silver. These coins are identified from the emblem of the dynasty inscribed on them. The coins of the Eastern Chalukyas who ruled from the 7th to 11th centuries A.D. had their insignia, the boar, on their coins (Fig. 10).

The Cholas dominated Southern India for over two centuries. The Chola coins have on them the figure of the tiger, the dynastic emblem, in various combinations. The coins of Rajendra Chola (1014 to 1044 A.D.) and Kulottunga (1070 to 1120 A.D.) show the tiger in the centre, fish and bow on either side of the tiger and a lampstand at each of the two extremes, as their central motif (Fig. 11).

The Pandyans were the leading power in the South in the 13th century. The earliest Pandyan coins were square, but die-struck. Between the 7th and 10th centuries, Pandyan coins bear the fish emblem. The fish appears sometimes single, sometimes in pairs and sometimes in conjunction with other symbols like the Chola standing man or the Chalukyan boar. The inscription on the silver and gold coins is in Sanskrit and most of the copper coins have Tamil legends (Fig. 12).

The coins of the Vijayanagar Kingdom (1336-1565) are very interesting. These coins are mostly *varahans* or pagodas weighing 50 grains, with their half and quarter divisions. These pagodas set the fashion for South Indian coinage which lasted till 1835 when the Rupee became the standard currency of India.

A number of figures are found on these coins. Among the most common are the bull, the elephant, various Hindu deities and *gandabherunda*—an eagle holding an elephant with its beak and claws. The inscription on the earlier coins is in Kanarese and on the later issues it is in Sanskrit (Fig. 13).

Muslim Coins

The Muslim conquest of Northern India introduced far-reaching changes in the system of Indian coinage.

The fashion of showing the bust or head of the ruler was dropped as the engraving of images was forbidden by Islam. With rare exception, these coins bear on both sides inscriptions in Persian, giving the king's name and titles as well as the date in the Hijra era. The mint name, that is, the place of striking the coin makes its first appearance on Indian coins during the period of the Sultanate of Delhi.

Another feature was the inclusion in the inscription of religious formulae, the most commonly used being the *kalma* or the Profession of Faith, "There is no God but Allah, and Muhammad is the prophet of Allah".

The period of the Sultanate of Delhi is also noted for the reappearance of silver in Indian coinage. This was due to the reopening of commercial relations with Central Asia.

Sher Shah Suri who ruled from 1540 to 1545 introduced two standards of weight—one of 175 grains for his silver and the other of about 330 grains for his copper coins. These were known as the *Rupee* and the *Dam*. Sher Shah was the first ruler to issue the rupee and his weight standard was adopted by Akbar and later by the English East India Company with little variations (Fig. 14).

The Mughal rulers attached great importance to the privilege of issuing coins. Akbar used his coins to propagate his new religion—*the Divine Faith*. The artistic tastes of the two Mughal emperors, Akbar and Jahangir, have been expressed through their coins. The mints were regarded by the Mughals as a sign of their dynasty's prosperity. Even Shah Jahan's brief occupation of Balkh was immediately commemorated by the issue of gold Mohurs. The regnal years of these kings were invariably inscribed on their coins.

The standard gold coin of the Mughals was the *Mohur* of about 170 to 175 grains. The silver Rupee was the most famous of all Mughal coins.

The gold Mohurs of Jahangir are the best example of Muslim calligraphy. They are perhaps the most artistic of Mughal coins. Jahangir adopted the practice of inscribing a legend in a couplet. He also issued the *Portrait Mohurs* one of which represents him holding a wine-cup. On some of his coins he added the name of his queen, Nurjahan.

The most famous of Jahangir's coins are the Zodiacal issues. These coins show pictorial representations of the signs of the Zodiac (Fig. 15).

The Muslim ruler of Mysore, Haider Ali, issued a pagoda showing on it the figures of the Hindu deities, Siva and Parvati (Fig. 16).

The English and French East India Companies for many years followed the Indian system of coinage. Thus we find various types of English East India Company pagodas—the old star or Company pagoda, the single swami pagoda, the three-swami pagoda and the silver star pagoda. These pagodas were issued from the Madras Mint.

Between 1814 and 1816, the Rupee became the standard coin of India. In 1835 a uniform device was introduced for the British Rupee. This rupee bears the Sovereign's name on one side and the title East India Company on the other. This type was retained throughout the period of the East India Company.

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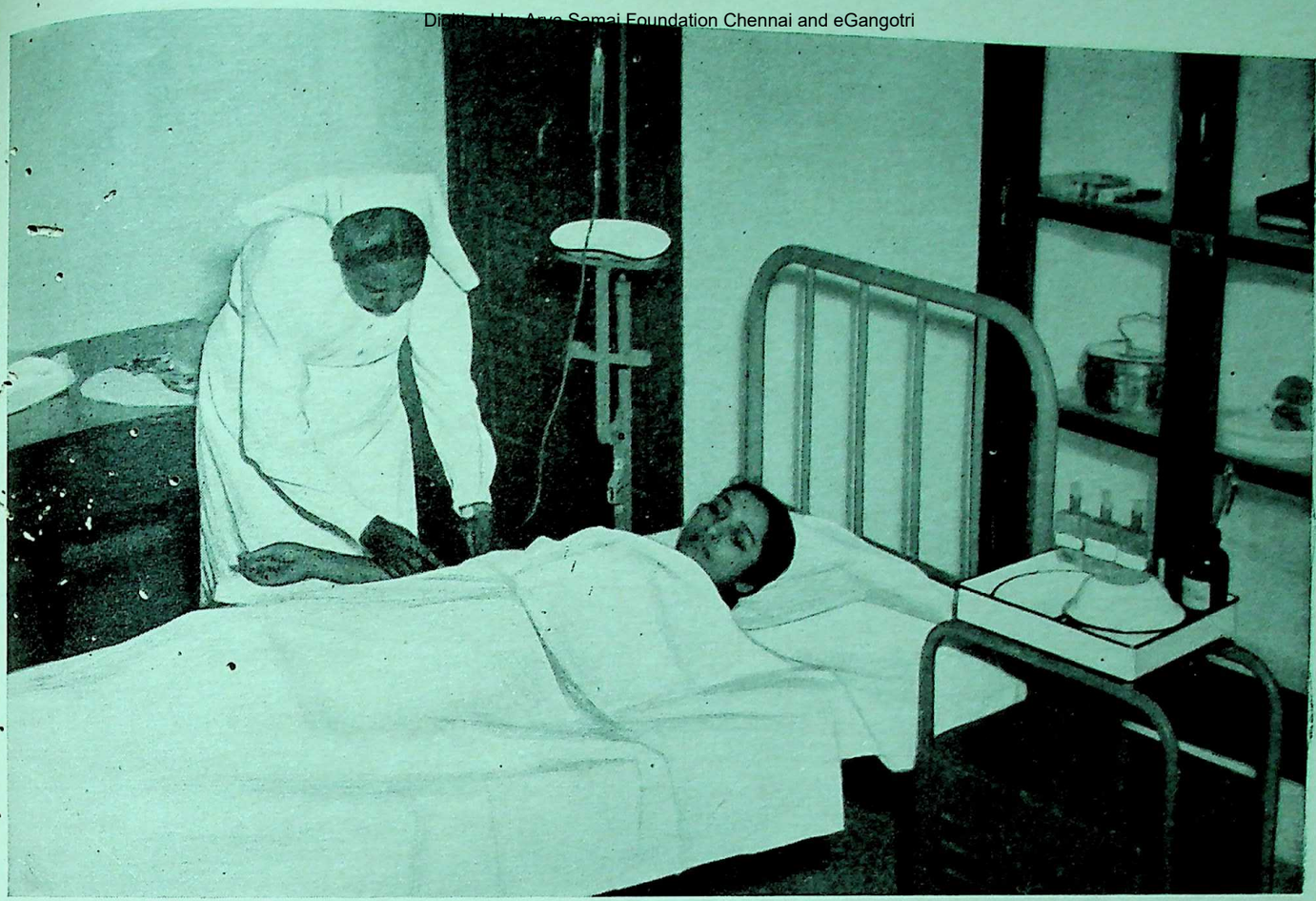

Central Hospital for colliery labour, Dhanbad

Social Security in India

Suresh Asthana

A PROGRAMME of social security broadly includes, security against sickness, invalidity, maternity and infantile mortality, old age and unemployment. Since India became free, the main feature of her economic activity has been the enforcement of provisions for social security ameliorating the conditions of workers. Steps have been taken to provide for factory workers, coal-miners, plantation workers and others through State insurance, provident fund and increased employment.

The only measures that existed in India before independence were Workmen's Compensation Act, Maternity Benefits Act and Coal-Mines Welfare Fund. But these Acts were limited in scope and hardly touched the fringe of the problem. A serious approach was made to the problem with the passing of the State Employees Insurance Act. This Act is a comprehensive measure in so far as the payment of compensation, periodical pensions and other cash benefits are concerned.

State Insurance

In accordance with the provisions of the Employees State Insurance Act, a corporation was established in 1952. It is known as the Employees' State Insurance Corporation and is a corporate body of 32 members. The Union Ministers for Labour and Health are its ex-officio chairman and vice-chairman respectively. The members are the nominees of the Central and State Governments, employers and employees organisations, Parliament and medical profession. A standing committee of 13 members looks after the administration of the Scheme. A Medical Benefit Council appointed by the Central Government acts as its advisory body.

The Central Government makes a grant to the Corporation of a sum equivalent to two-thirds of the administrative expenses of the Corporation excluding any other benefit costs.

The contributions are payable by the employers and employees, and grants and donations come from

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the State Governments. The contributions from the employers and employees are paid on weekly basis at such rates as are specified by the Corporation.

The benefits provided to the insured person or his family include medical, sickness, maternity, disablement and dependant's benefits. An insured person can receive medical benefit at the dispensary as an indoor or an outdoor patient and also get aid from the doctor at his residence. Mobile dispensaries visit distant areas at regular hours.

An insured person is entitled to sickness benefit, besides free medical aid, if he has paid a minimum number of contributions. This benefit is paid in cash amounting roughly to seven twelfth of his average wages.

An insured woman in case of confinement can claim sickness benefit or twelve annas as maternity benefit, whichever is higher.

The disablement benefit is payed in case permanent or temporary injury is sustained during working hours. If a worker is permanently disabled, he gets benefit for the rest of his life, and if he is temporarily disabled, the benefit received is a little over half the average daily wages.

If an insured person is the breadwinner of the family and he dies of injuries at work, his dependants can claim such benefits as are specified by the Corporation. If there are no direct dependants of the deceased, the parents or grandparents or such other dependants as are decided by the Employees' State Insurance Court are entitled to draw dependants benefits.

The disputed cases are settled by the Employees Insurance Court and special tribunals set up for the purpose.

The Corporation reviews its assets every five years and is authorised to raise the existing scale of benefits and extend its duration if the funds permit it to do so.

Certain rules and regulations have been framed for bringing about uniformity in the enforcement of the scheme. For instance, the Central Government circulated the Model Employees' Insurance Court Rules and Employees' State Insurance (Medical Benefit) Rules to State Governments. The Central Government has also framed Employees' State Insurance (Central) Rules 1950; Employees' State Insurance (General) Regulations, 1950; and Employees' State Insurance (Provident Fund) Regulations, 1951.

Maternity Benefits

The Maternity Benefits Act applies to all regulated factories in Bombay, Madhya Pradesh and Assam. In Assam and West Bengal plantation workers are also covered. In other areas the Act applies only to non-seasonal factories.

The rate of payment is twelve annas per day plus food concession for eight weeks. Besides cash payment a compulsory rest period is also provided. In certain States, creches are maintained and health visitors provided.

Compensation for Workmen

The Workmen's Compensation Act applies to about 27 categories of workers and to those earning less than Rs. 400 a month. The question of extending the provisions of the Act to other categories of workers and raising the limit of their minimum earning is being considered by the Government. Compensation is payable in case of death, permanent total disablement, permanent partial disablement and temporary disablement. But compensation is not payable for temporary disablement if the injury lasts for seven days or less. The State Governments have been empowered to add to the list other cases of sickness which can also receive compensation.

The State Governments are responsible for administering the provisions of the Act. They appoint a commissioner for Workmen's Compensation in their respective States who settles claims, adjudicates disputed cases and is responsible for the revision of periodical payments.

The rate of compensation in case of death of an adult worker has been fixed at Rs. 500 in the lowest wage group which is below Rs. 10 per month; and Rs. 4,500 in the highest wage group which is above Rs. 300 per month. For minor workers the rate is Rs. 200 in case of death and Rs. 1,200 in case of permanent total disablement. The rate of compensation is the same both for an adult and a minor worker in case of temporary disablement. In case of permanent partial disablement, the rate of compensation is calculated on the basis of percentage of loss of earning capacity.

The amount of compensation payable cannot be attached, assigned or set off against any claim. In case of solvency of the employer, the interest of the worker has been protected under the Act.

Coal-mine Workers

The main provisions under the Coal-mines Provident Fund and Bonus Schemes are to provide a scheme for provident fund as well as the payment of bonus for employees in coal-mines. The scheme was framed by the Government of India in 1948.

This is a contributory scheme and the rates of contributions differ among different wage-groups. For instance, it varies from As. 2 per week to Rs. 2-12 per week at the maximum. The employees who earn rupee one or less in a week are not required to pay any contribution. The employers are also required to pay for the worker's contribution in the beginning which can later be recovered from the wages of the worker.

A board of trustees constituted by the Central Government administers the Scheme. The Coal-mines Provident Fund Commissioner is the chief executive officer of the fund and is assisted by a number of in-

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spectors for the purpose of enforcing the provisions of the Scheme.

Provident Fund

A scheme for provident fund under the Employees Provident Fund Act, 1952, has been framed and it is in operation in 20 regions. It applies to those employees who are engaged in major industries which include cement, cigarette, electrical, mechanical and general engineering, iron and steel, paper and textile. Each industry employing 50 or more persons comes under the purview of the Scheme. The industries which have been in existence for less than three years and those which are run by the Central, State or local Governments are outside the scope of the scheme.

The rate of contribution to the fund by the employer amounts to six and a quarter per cent of the basic wages and dearness allowance of each employee. The employee can pay an equal amount but it should not exceed eight and one third per cent of the basic wages including dearness allowance.

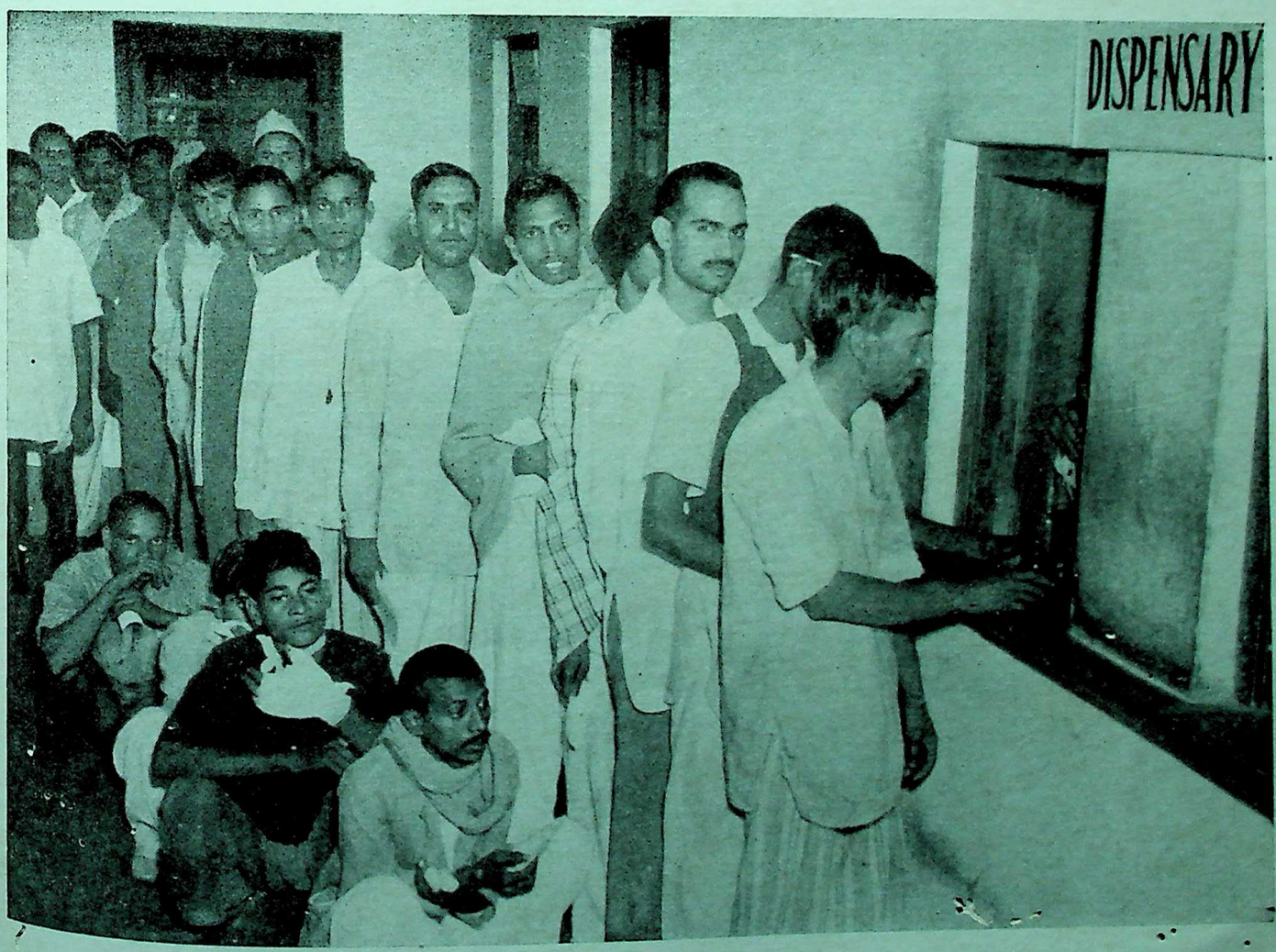
Retrenchment and Lay-off

In accordance with the provisions of Industrial Disputes Act, 1953, the workers are protected against retrenchment or lay-off. In case of lay-off the benefits provided to a workman under the Act are the payment of 50 per cent of the total basic wage and dearness allowance for working days. This benefit is applicable for more than 45 days in case the worker is again laid-off for further continuous period of more than one week during the same year. The casual worker, however, can draw the benefit if he has completed one year of service in the same establishment.

Compensation is not payable if the worker refuses to accept an alternative employment provided by the employer. If he does not present himself for work at the establishment at the appointed time during normal working hours at least once a day, he is not eligible to draw any benefit. The provisions of the Act are not applicable in case such laying-off is due to a strike or slowing down of production on the part of a worker.

In case of retrenchment, the employer shall pay 15 days' average pay for every completed year of service or any part thereof in excess of six months. The employers are bound to give one month's notice or in lieu of such notice wages for the period of notice. The employers are also responsible to pay retrenchment compensation. Workers already retrenched are shown

Employees receiving medical aid



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Doctor attending on a patient

preference over others when new appointments are made.

It is evident that social security measures which have been introduced in India only recently are still in an experimental stage. This is also true of those countries where these measures were introduced long ago and where many difficulties are being experienced even now. Those countries have also to amend the existing schemes in the light of experience gained. In India, too, the working of the schemes has shown that they require to be amended. For instance, the Employees Provident Funds (Amendment) Bill is again before Parliament. The Government of India have recently circulated a memorandum detailing the defects noticed as a result of the working of the Workmen's Compensation Act and proposals for its amendment.

The Employees State Insurance Scheme has been launched as a result of a tripartite agreement between employers, employees and the Government. The All-India Trade Union organisations are also fully co-operating to make the scheme a success.

The Employees State Insurance Corporation can take over the liability for payment under the Workmen's Compensation Act.

Under the Employees' State Insurance Act, insured persons are protected against dismissal or other penalties by employers during the period of sickness, employment injury and maternity confinement.

The application of Coal Mines' Provident and Bonus Scheme to a vast mass of extremely transient labour has been a great success. The scheme is becoming increasingly popular among the working population. The success of the scheme encouraged the Government to formulate a similar scheme of compulsory contributory Provident Fund for other important industries.

The actual working of the Employees' Provident Funds Scheme showed that it was necessary to amend the scheme. A Bill incorporating the amendments has been introduced in Parliament and is expected to be passed very soon. It is also proposed to take steps to decentralise the scheme.

The right to work and the right to be compensated when involuntarily unemployed has been accepted both by employers and employees. To help involuntarily unemployed, the Industrial Disputes Act was passed. This legislation has relieved greatly the worker from the apprehension of insecurity of employment.

The Minimum Wages Act primarily applies to unorganised workers, for instance, to those engaged in *bidi* factories, carpet weaving establishments, stone quarries, tanning and similar employments. In order to extend the application of the Act to agricultural labour and other major industries, the Government has drawn up a Fair Wages Bill.

It may not be possible to cover all types of workers immediately under any scheme of social security due to the prevailing economic conditions in India. But it cannot be denied that much has been achieved with the passing of the Employees State Insurance Act, Maternity Benefits Act, the Workmen's Compensation (Amendment) Act, Employees Provident Fund Act, Coal-Mines Provident Fund and Bonus Scheme, and Industrial Disputes Act. These Acts have covered a large number of employees working in different categories of establishments.

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Food in India

Suniti Kumar Chatterji

As in many other matters, India presents in both food and dress a noteworthy diversity in its various parts, although in the midst of this diversity we find the running thread of a basic unity. Because in different parts of India the climate and the natural features differ, the type of food available also differs; and consequently different kinds of alimentation have come to be established in the various geographical areas within the sub-continent of India, e.g., in the Panjab, in the North Indian plains, in Bengal both West and East, in Maharashtra, in South India, in Nepal, in Kashmir, in Assam. Quite a remarkable variety is presented by the food which people normally eat in these and other parts of India.

The entire continent of Europe has been roughly divided into two main tracts, taking note of the climatic and economic situation. We have the comparatively colder lands of North Europe, and the warmer areas of South Europe. In North Europe, they keep cows to a larger extent than in the South, and milk products like butter and cheese are very commonly used. They use butter largely in preparing food (failing butter, lard is also largely used for cooking purposes); and the commonest form of drink in Northern Europe is beer, which is brewed from barley. South Europe, on the other hand, is a land of goats, and cattle are not so very common; and two of the commonest fruits are grapes and olives. Cow's milk and butter are not so common there, although in some parts goat-milk cheese is known; and from the olive they have the rich olive oil which is used very largely in cooking in South Europe. From grapes they make wine, and wine, more than beer, is the common drink in the South. Taking note of these facts, Northern Europe is sometimes described as the "Beer and Butter Area", and Southern Europe similarly is described as "Wine and Olive Oil Area". There is of course a considerable amount of overlapping, and grape wine from the South as Port and Sherry and Champagne, and various Italian and Spanish wines, are quite commonly drunk in the North, as beer has also spread to the South.

In a similar way, India can be divided roughly into two areas—one being the comparatively drier tracts of the Panjab, Rajasthan and the Western Ganges Valley as well as those of Maharashtra and Central India; and the other area would be the moister tracts with a larger rainfall, like the Eastern Gangetic Valley and the coast-lands of East, South and West India. The drier area can be called the "Wheat and *Dal* (or Pulse) and *Ghee* (or Butter) Area", and the Panjab and Western U.P. as well as Rajasthan and Madhya Bharat would preeminently come under this. We have as against this the "Rice and Fish and Oil Area", which covers Bengal and a good bit of the Eastern Gangetic Valley, Assam, Orissa and the coast-lands of South India, particularly Kerala. The oil that is in use in this second area is not the same everywhere. Bengal, Assam, Orissa and Bihar use largely mustard oil; in Karnataka and in Tamil Nada it is, or used to be, most commonly *gingelly* or *sesamum* oil; and in Kerala and Bombay coastal tracts it is coconut oil. Those who commonly eat *ghee* do not at all like any of the above oils as substitutes. But at the present moment, owing to scarcity of milk and butter in India, various kinds of "vegetable *ghee*" made from coconut oil or groundnut oil or oil from the cotton seed are being largely used, and pure *ghee* made from cow's or buffalo's milk is becoming a very rare commodity in India. With the advent of this "vegetable *ghee*", one might say that something like a revolution has come into Indian dietary: and this is not a revolution for the good.

These little or big differences in the food eaten in different parts of India notwithstanding, there are certain pan-Indian characteristics in Indian food in general. The first noteworthy thing is the predominance of vegetarianism in Indian dietary. The basic food of India is some kind of staple like boiled rice or *chapatis* (unleavened bread made from either wheat or some kinds of inferior grain like the millet), eaten with prepared pulses. There are various kinds of pulses or lentils found in different parts of India, and they are generally seasoned with a little oil or butter and spices of various sorts. In this way we have either *Dal-Bhat* or *Dal-Roti*, i.e., Rice with *Dal* or Pulses, or Bread with Pulses, which is the most common food of India. One may say that the national dish of India is "Rice and Curry", and this curry may be made either from merely pulses seasoned as above, or one or more kinds of vegetables, or meat or fish or eggs. Generally this basis of pulse or vegetables or meat or fish is in some kind of heavily spiced gravy made from various ingredients (condiments and spices); and this "Rice and Curry", as quite a substantial and satisfying kind of food, which is also quite tasty, has become widely popular outside India too. In international menu, this national dish of India—*Rice and Curry*—has found a place. In restaurants in England and France, and other countries of Europe, and in America, *Curry*, or as the French call it, *Carrie Indienne* or Indian *Curry*, is frequently served to non-

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Indian customers as well. As a matter of fact, India has contributed three noteworthy items to international menu. First *curry*, second *chutney* (which is a kind of sweet and sour fruit pickle, curry-like in its basis, highly seasoned with various kinds of spices and particularly hot chillies), and finally a kind of vegetable soup made from lentils which is both hot and sour, and delicious to taste. This last has been accepted at least in the English menu as a highly relished soup (in English, *Mulligatawney Soup*—the word is just the Tamil *Mulgu-Tannir* or "Pepper-water" in English: this is one of the most popular dishes of South India and is now spreading to the North, and is known also as *Rasam*).

In addition to the above, there are a few other types of Indian dishes which are also popular all over India. But they have not been accepted in international menu like *Curry* and *Chutney* and this *Mulligatawney Soup*. Thus, for example, a very common Indian dish which is very much relished everywhere, is *Khichdi*, which is a mess made of rice and lentils and various kinds of vegetables put in, with generous additions of *ghee* and spices of all sorts. *Khichdi* could not be popular outside India because *dal* or lentils as a relish for the staple food rice or wheaten bread is not popular outside India. Another pan-Indian dish is *Rice-milk*, and this is known as *Payasa* (this is the Sanskrit name, which is current in Eastern India and South India)—it is also called *Paramanna* or *Khir*. In preparing this, good quality rice is boiled in plenty of milk and then it is sweetened with sugar (or with what is regarded as a particular delicacy in Bengal during the winter season, viz., liquid molasses from the date-palm), with garnishing of raisins, almonds, pistachio nuts, etc. This dish is fairly popular in the countries of Near-East — in Iran, in the Arab countries, and as far West as Greece; and in richness and tastiness the English rice-pudding cannot approach it.

The common Indian sweetmeat in North India particularly is *Mohan-Bhog* (called aslo *Halwa*, which is an Arabic word). This is a kind of pudding made by frying *soojee* or wheat semolina in butter and sweetening it, and adding almonds, raisins, pistachio nuts, bits of coconut, etc. This dish, which is very popular, is the one which is offered by the Sikhs in their temples, and it is used by them as a sort of consecrated food known as *Karha-Prasad* (*Prasad* or the consecrated food which has been cooked in an iron cauldron or *karha*, and the ingredients, i.e., flour, *ghee* and sugar are strictly in equal proportion). In South India, they prepare a similar dish but with salt, and with hot green chillis, and flavoured by the leaves of a particular plant called "the sweet-bitter leaf" in North India (*Mitha Nim*); and this South Indian dish, *Uppuma*, is now becoming popular in North India also. These have somehow not caught the fancy of outsiders.

We may similary expect, as in the case of the Indian *Rice* and *Curry* and certain Chinese dishes (in howsoever a modified form, like *Chop Suey* and *Chow Mein*) that other distinctive dishes from different parts of the world will also enrich the menu of the world; and among these we might mention two special dishes which belong to Africa—*Couscous* or boiled husked wheat and mutton with gravy from North Africa, and *Palm Oil Chop* or *Palm Oil Stew* with vegetables and meat from West Africa.

To come back to India. Although the Indians have not been specifically a nation of gourmets and gourmands, and they did not make much noteworthy progress in gastronomy or the art of good eating, nevertheless Indians had the good sense to adopt good things in the way of eating from all the peoples with whom they came in contact. But India as a country which abhors the taking of life on principle, and thus gives a special value to vegetarianism, concentrated in the preparation of a number of sweet dishes and vegetarian pastry, from both milk and cereal bases.

The three peoples who made the greatest contribution to the art of good eating in ancient or modern times were the Chinese, the Iranians or Persians, and the French. The Iranians, being neighbours and partly kinsmen of the Indians, have very largely influenced Indian cooking, as they have done that of the Arab world and through it that of Europe, and again through the Turks the cuisine of Modern Greece. Iranian influences have penetrated from India through Burma to Siam, Cambodia and Indonesia, and through Central Asia and Sin-Kiang right into the heart of China (where the Chinese Muslims—the Hui-hui—who are largely of Uighur, i.e., Central Asian Turki origin, have introduced into China some very popular ways of cooking mutton).

Indian meat cooking does not seem to have made much progress by itself, for in the few Sanskrit treatises on the art of cooking that we have (e.g., the *Nala-paka*), we have more attention paid to various ways of preparing rice than anything else. On the other hand, even during the pre-Muslim or pre-Arab times, Iranian or Persian cooking was very much advanced, and we have discussions of the ways of cooking meat and vegetables in Pahlavi literature which were utilised by Arab writers on the art of cooking. Iranian dishes like the *pulao*, and various kinds of mutton and other meat preparations were brought to India, by the Turks and Iranians themselves. Only in India, the Iranian way of cooking was modified by a very great emphasis being put on spices, and this has led to the development during the last three or four centuries, particularly during the Mogul period, of the specific Indo-Persian style of cooking, which is known as *Moglai* cooking, i.e., Mogul cooking, which has its distinctive place in the culinary art of the world.

Although vegetarianism is the dominant idea in India, and everybody pays a certain amount of deference to vegetarianism (even certain Muslim Sufis in India are vegetarians), it is not that meat and fish eating are not very common. But, as in all economically backward countries, those who eat meat or fish cannot afford it every day, and usually meat can be taken only on festive occasions. In India, from very ancient

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times all kinds of vegetable food were quite abundant, and the land was literally flowing with milk and honey. Then, the ideas of *Ahimsa* (or Non-injury, including abstaining from taking life) came to be established. Further, in a hot country vegetarianism was thought to be healthier, and people took plenty of milk and milk products and fruits and vegetables of all kinds. Quite a number of peoples, who before they came to India were ardent meat eaters, gradually succumbed to local influences and changed their diet entirely. This is what happened to the Aryans after they came to India. At first they used to eat quite a lot of meat, but gradually their descendants became largely vegetarian. India is about the only country in the world where not hundreds and thousands but even millions of people are by conviction as well as by family and social tradition abstainers from all kinds of flesh meat, including fish and eggs. Vegetarian Indians going abroad are also very particular about their food, and hence it becomes both a problem for them as well as for their hosts. In international gatherings, wherever the host nation or organisation is a little careful, the Indian guests—at least some of them —are accommodated by thoughtfully prepared special arrangements for pure vegetarian dishes.

In the pre-historic age, man was used to moving about in search of food just like the lower animals, for in the earliest period of man's history, he was not much advanced from the state of the lower animals. Man in the earliest ages was always on the look out for getting something to eat for his next meal. In this "Food Gathering Stage", man, either in isolated families or in small groups, which formed the beginnings of the tribe, would be moving about seeking for whatever would be edible—roots and fruits by digging and plucking, animals and birds by hunting and snaring, fish and other aquatic animals by catching or shooting them in rivers and lakes, and even grubs and insects wherever they would be available. So man began as an omnivorous animal. Much later when he advanced in life and came to the "Food Producing Stage", he was either a keeper of herds or flocks, or a tiller of the soil in a primitive way, or both combined. In this way, he could get a stock of food always at his disposal, either from his flocks and herds which would give him meat and milk, or from tilling the soil which would enable him to harvest and store for future use the crops he raised by primitive agriculture. As soon as he became a food producer, free from this continuous urge to move about in search of food, he made the greatest advance in civilisation.

In India we find from early times various kinds of people. There are still now some primitive food gatherers who are to be found among our aboriginals (or *Adivasis*), who are the most ancient Indians. Their way of life is of course changing rapidly, and they are becoming quickly food producers like their more advanced kinsmen. At the threshold of Indian History we find that the main races of people in possession of the land were the Austrics (Nishadas, Bhillas, Kollas), the Mongoloids (Kiratas), the Dravidians (Dasas, Dasyus or Sudras, or Dravidas) and finally the Aryans. All these peoples were already food producers, although here and there among the Austrics and the Mongoloids there might be groups which were still in the food-gathering stage. The Austrics had developed in India through the digging stick and the hoe, the cultivation of rice, and of a number of vegetables like the pumpkin, the brinjal and the yam (*arai* or *kachu*), besides condiments like pepper, ginger and turmeric. They also used to keep poultry (chicken and ducks) and pigs; and therefore they were already advanced in the matter of a regular food supply. Fish, wherever it was available, was also plentifully eaten in their diet. The Mongoloids were more or less in a similar stage of food-producing as the Austrics. The Dravidians probably were the first in India to till the earth with ploughs drawn by oxen, and they also used to keep domestic cattle for meat and milk. The Aryans were mainly pastoral who would be moving about with their flocks of sheep and goats and herds of cattle and horses, but they did not know the pig, nor did they have any poultry. But they also used to have a little agriculture—it was barley originally, but they quickly learnt to substitute it by rice which they evidently obtained from the pre-Aryan peoples of Iran and India; and later on, they got also the wheat from the men of the Near East.

This was the primitive economic background of Indian alimentation. The Aryans, as far as we can find out from the early literature of India as in the Vedas, were a people who used to eat as their staple food not only various preparations of barley (and then, in interior India, of rice, but not as yet wheat) and some of the pulses they knew (*Masha* or what is known now as *Urad* or *Kalai-ki Dal*, and *Mudga* or the *Moong* pulse), but they used to eat also a lot of meat which was mutton and goat meat as well as beef and veal. The religious ritual of the Aryans was the *Fire Ritual* or *Homa*, in which they built an altar of stones or bricks and on that they lighted a fire, and in the fire they put as burnt offerings to please their gods the food that they used to eat; and this food was barley cakes or cakes made of rice powder, meat and fat of animals killed for the sacrifice (these animals were killed in a very cruel manner, generally by strangling and sometimes by hacking on the back with weapons and sometimes by piercing in the heart with a finely pointed stick of hard wood). They also used to add to these offerings the *soma-juice* which was a kind of intoxicating drink with which they used to make themselves merry.

This kind of food could not be tolerated by the softer and more civilised descendants of the primitive Aryans who had occasion to intermix with other races in India. We do not know anything definite about the food which was eaten by the pre-Aryan peoples. But they did not have any objection to animal food of any kind, although their staple food appears to have been rice. The pre-Aryan ritual of worship is believed to

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have survived in the present-day Hindu *Puja* Ritual and in this ritual, cooked food is offered before the image or symbol of the Divinity, besides fruits and raw produce of the earth like uncooked rice, and flowers and leaves. When an animal was sacrificed, it was sacrificed by decapitation, and its blood was taken and placed before the image in a flat cup, and some of it might be smeared on the image. So the ritual was quite different from the *Homa*, the Aryan's Fire Ritual. The predominance of vegetable offerings in the *Puja* Ritual would suggest that the people among whom this originated were by preference vegetarians. In any case, we find in some Sanskrit treatises a conflict or controversy between two types of alimentation, non-vegetarian and vegetarian—e.g., in a work like the *Mahabharata*, we find, in the *Anusasana Parvan* of this great Epic, a discussion about the merits and demerits of meat-eating, and although it was admitted that flesh meat was the best of food and most sustaining, still it was suggested that in the interest of humanitarianism meat-eating should not be countenanced. This just gives us an echo of a conflict of ideas in the matter of food—and certainly also of economic and other handicaps and conveniences.

Finally it was a victory for vegetarianism. Although it was probably a hard-won victory, it was yet not a full victory. The Vedic Aryans were sturdy meat eaters about 1,000 B.C. and later, by 350 B.C., as indicated in the Sanskrit treatise on administration and politics, the *Artha- Sastra* of Kautilya, or Chanakya, the celebrated Minister of Chandragupta Maurya (4th century B.C.), we are told that a measure of boiled rice supplemented by cooked pulses (*supa*, forming about one-fourth of the quantity of the boiled rice), flavoured with both spices and butter (which was virtually our present-day *Dal-Bhat*), formed the ordinary food of an Aryan, i.e., to say a well-placed Indian (Arya-*bhakta* or 'the Aryan's food'). Thus rice and *dal*, or rice and curry had won the day.

In the 17th century, during the time of Jahangir, the Dutch observer Pelsaert had noted that the common food of the Indians was a dish of rice and pulses with a lump of butter in it. From Asoka's inscriptions (3rd Century B.C.) we learn that Buddhist ideas of *Ahimsa* or non-injury were making the king a vegetarian. He admitted in his inscription that formerly there used to be killed many hundreds of animals in his kitchen for curry purposes. But he reduced the number to one deer and two peacocks (i.e., one animal and two birds) every day. We are told in the *Mahabharata* that King Rantideva used to slaughter hundreds of cattle to provide beef for curry to be distributed with rice to people who came to his court, and from their blood and fat flowing from the shambles the river Charmanvati or Chambal originated.

Rice and curry or rather rice and *dal* became established as the typical Indian food before the Christian era. During the beginning of the second millennium A.D., when Persian-speaking Turks and others, Muslims by religion, came to India and conquered the country, they noted among other things, and with considerable amazement, that the Indians were a strange people who ate "grain with grain" and called it *dal-bhat* or *dal-roti* (*Hinduan ghalla-ra ba-ghalla mi-khordand, wa mi-goyand "dal-bhat", ya "dal-roti"*). In their own homes they were accustomed to eat wheaten bread with mutton or chicken or with some other kind of relish, but not pulses, and it appeared strange to them that in India Hindus should eat one kind of grain using another kind of grain as a relish.

Quite an interesting amount of research work is waiting to be done by competent scholars in the matter of food in India. Raja Rajendralala Mitra, over 80 years ago, wrote some very interesting articles on various kinds of food in ancient India which have been published in his book "The Indo-Aryans." Various kinds of foods for medicinal and other purposes are described in the ancient Indian medical treatises. In literature also, in Sanskrit, in Pali and the Prakrits, and in the Modern Indian Aryan languages, as well as the ancient Tamil and other South Indian texts, a long list of various kinds of food preparations with their modern counterparts wherever they are to be found can be made. Thus in Bengal, we have the various menus in feasts described with great gusto, and such menus can be drawn up from the 15th century onwards; and a good deal of these various kinds of food preparations as mentioned or listed in early Bengali literature are still current. I have seen mediaeval Sanskrit verses describing or enumerating the items in two kinds of vegetarian feasts—*Pakki* or dishes all cooked in butter, with sweets made from condensed milk, and *Kachchi* or ordinary rice and vegetable curries and pulses in various forms, which are in use in North India.

Some of our temples have kept up intact without any change the kind of food which was ordained to be offered to the Deities in the temple, and this would give us an idea of the delicacies which were commonly known at the time of the first consecration of the temple. Thus the temple of Jagannath in Puri, which is believed to have been consecrated in 1199 A.D., still prepares (in the elaborate kitchen forming part of the temple, and through a class of Brahmin temple-servants who hold the office in a hereditary capacity and are known as *Suaras* or *Supakaras*, i.e., cooks), the kind of vegetarian food which was available to high circles in Orissa at the end of the 12th century. This consists, of course, of boiled rice and some kinds of vegetable curries in which later importations through foreigners of plants like the potato and cauliflower have no part. The sweets and pastries which are offered there also indicate the best that was available at the period, and they are made mostly from rice powder. So, too, in most of the South Indian temples.

Although the old Hindu vegetarian cooking has been kept more or less intact in orthodox families and in the temples as mentioned above and in monasteries

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and similar institutions, Indians were not averse to making experiments in the matter of new types of food. Frequently, the name indicates the native or foreign origin of a particular kind of food preparation. Thus many Indian sweets, like *peda*, *khaja*, *pua*, or *malpua*, *laddu*, *moti-chur*, *bundia*, *bir-khandi*, etc., and salted preparations like *kachauri*, *dal-puri*, and various *pithas* or rice-paste cakes, go back to pre-Mohammadan times; and some sweets and pastries like *barfi*, *kalakand*, *balu-shahi*, *gao-zaban* (Bengali *gaja*), *jalebi*, *samosa*, and *namkin* came from Iran. A special preparation of a kind of food already current in India, which came from abroad, sometimes brought in its foreign name also. India gave to the whole civilised world sugar and sugar-candy, and the names in a large number of languages for these products from the sugarcane (which was one of the greatest gifts of India to mankind) are from the Sanskrit words *sarkara* and *khanda* (sugar and candy). But in India it is particularly noteworthy that in the North, sugar is commonly known as *Chini*, i.e., "the article from China", and sugar-candy as *Misri*, i.e., "the article from Egypt". The reason is that a kind of white sugar was first made by a novel process introduced in Bengal by some Chinese sugar-refiners and that is why refined white sugar came to be known as "the Chinese article". Similarly a special kind of sugar-candy, also refined and whitened, somehow came to be associated with Egypt. The Indian bread or *roti* is just unleavened bread, but the Portuguese brought to India the European leavened bread, which the Portuguese called *paon*, and now the combined *paon* plus *roti* has given the Indian word for European bread—*paon-roti*.

Just as quite a number of dishes and sweets have come to India from Iran (*pulao*, *shorba*, *kabab*, *nan-khatai*, *halwa*, etc.) and from Central Asia (*qalia*, *korma*), so also the Portuguese, the French, the Dutch and the English have supplied their quota to the Indian cuisine. The Dutch *poespas* has been taken over in Bengal as *pishpash*, which is a kind of mess of rice and meat, not exactly like the Indian *pulao* (which is a very rich rice dish boiled in meat gravy and with plenty of butter and with spices as well as almonds and pistachio nuts and bits of meat). The English words *chop* and *cutlet* are quite familiar in India now. But the Indian *chop* is just a variety of the Indian vegetable *bada*—it consists of minced meat flavoured with spices and cooked in butter, used as the stuffing inside a ball of mashed potatoes (garnished with bits of chilli and greens) which is also fried in butter; and the Indian *cutlet* is made from minced meat paste with spices, fried like any vegetable *bada*.

Portuguese and English cooking found a new home among the Indian Christians of Goa and the Bengali Buddhists of Chittagong and Burmese Buddhists of Arakan; and Goanese cooks from Western India and *Magh* cooks from the Chittagong side are everywhere sought as very competent chefs for European cooking in India. The cooks who were trained by the Anglo-Indian or British residents in India also helped to enrich Indian cooking. European foods like roast mutton which would have to be cut with a knife have not generally become popular in India, because people still largely eat with their fingers and in Indian cooking the meat is cut and cooked in convenient mouthfuls.

In that great book compiled under the orders of Akbar by his Minister and Secretary Abul Fazl—the *Ayin-i-Akbari*, which is a most invaluable gazetteer giving a complete picture of some aspects of Indian civilisation during the second half of the 16th century, while describing the kitchen of Emperor Akbar, the ingredients for 30 kinds of special dishes have been given—10 purely vegetable, 10 meat and vegetable and 10 purely meat. In Akbar's kitchen to prepare *halwa* (or *mohan-bhog*) the ingredients employed were 10 seers of *soojee* or semolina, 10 seers of sugar-candy and 10 seers of *ghee*, with other necessary spices and garnishings. There is no comprehensive work on Indian cooking as a whole available, but there are books in English giving various aspects of Indian cooking, particularly in its Anglo-Indian development; and we can mention the excellent and comprehensive works of the late Vipradasa Mukhurjea for Bengali cooking; and there are other books for different types of Indian provincial cooking in Assamese, Hindi, Urdu and other Indian languages. A full list should be drawn of noteworthy works in English and in the different languages of India in this line for research into this important branch of a nation's life and culture.

In serving food, different parts of the country have their own usages. In Bengal, they begin with bitters when they eat their rice with various kinds of curries, and pass through vegetable curries and *dal* to fish curries and then to meat if there is any, and then *chutney*, and finally curds and sweets. In North India, they put all the things in little metal cups side by side on a big metal plate (*thali*), and no hard and fast order need be observed—people passing from one dish to another at their free will. That will not be looked upon as good form in Bengal or in the South. This North Indian *thali* system—all the relishes like vegetable and meat curries, *dal*, pickles, curds, sweets together with rice or *pulao* and *chapatis* in a big plate —is now becoming established in railway-trains and in station restaurants. In Rajasthan, meals must begin with sweets and pastry cooked in *ghee*, followed by rice and *dal*, and the last dish is roasted *papar* or *pappad*. This *papar* is a pan-Indian dish—it consists of dry thin rounded wafers prepared from different kinds of pulses made into a paste and seasoned with all kinds of spices (sometimes it can be very hot, but it is always tasty), and this is a favourite dish, whether roasted, or fried in oil or butter, for the whole of India. It seems to have been of Dravidian origin—in North India it is known as *papar* or *pappad*, and in South India a modified form of this North Indian name is common—*pappadam*. In Sanskrit, the word is found to occur as *parpata*, and we cannot but compare this

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Sanskrit word with the common South Indian word for pulses, namely, *parppu*. In the South and in Maharashtra meals must end with sour curds or butter-milk which is mixed with rice and eaten with great gusto, showing the finishing of a meal.

A lot could be said about the various noteworthy provincial dishes. But at the present moment, through greater inter-migration and inter-connection of people, we are getting very much mixed up. Yet there are certain local dishes, vegetarian or non-vegetarian, and sweets and pastries, for which considerable local patriotism is felt. During the last century, confectioners of Calcutta in Bengal invented a number of sweets made from caseine or soft cheese (*chhana*), and at least one of these has become popular all over India and now forms the most important contribution of Bengal to a pan-Indian menu. It is the *rasgolla* or "juice-ball", which consists of balls of *chhana* or soft cheese lightly boiled in syrup. This delicacy, with many other Bengali sweets like the *sandesh*, the *khir-mohan*, the *cham-cham*, the *panitoa*, the *lavanga-lata*, the *chhanar-mudki*, is now found as far North as Kashmir, as far West as Peshawar and Karachi and Bombay, and as far South as Madras and Madura.

In spite of these local variations and specialities, there is the common pan-Indian type of menu, and this is what Indians will recognise everywhere as proper Indian food when they are abroad, whether in London or Paris, or New York or Washington, or Rangoon or Singapore, or Nairobi or Zanzibar, wherever there are Indian restaurants.

I can only close by giving a typical pan-Indian menu, non-vegetarian, served in the European way:

Hors d'Oeuvres :	Various kinds of Indian pickles (*Achar*); bits of fried or roasted *Papar;* Celery, Lettuce, salted slices of Radish; sliced fruits sprinkled with curry powder; bits of dried fish from Bengal or Bombay.
Soup :	Mulligatawney Soup (*Rasam*).
Fish :	Fried *Bekti* or Pomfret; or Smoked *Hilsa* from Bengal, with *Dahi* or Curds.
Side Dish :	Indian Mutton Cutlet with curried vegetables.
Main Dish :	*Biryani Pulao*, or *Bhuni Khichdi*, with Mutton or Chicken *Korma* and sweet Mango Chutney.
Sweet Dish :	*Khir* (or *Payasa*), with *Rasgolla*.

TOWARDS FLOOD CONTROL (*Continued from page* 14)

ancillary to flood control works will receive due consideration during the Second Five Year Plan. A broad-based programme for carrying out reconnaissance and investigations in the various catchment areas has already been drawn up and when the results of these become available, specific scheme for soil conservation will be formulated.

The measure of success that has been achieved so far is impressive and encourages the hope that such projects will help materially in reducing the losses and alleviating the miseries suffered by large sections of the population by recurring floods.

The figures collected for the years 1950-54 show that the damage caused by floods amounted to nearly Rs. 1,750 million, that is, nearly Rs. 350 million annually on an average. The Relief and Rehabilitation measures undertaken during this period amounted to more than Rs. 200 million. These figures show the colossal drain on our Exchequer. It is expected that if the flood control projects envisaged are executed, the damage caused by floods can be reduced by 50 per cent. Flood control schemes will, therefore, bring security to the flood affected areas, help in the development of the areas by fully utilising man-power and other resources available there and open out opportunities for a richer and more varied life.

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*Tattva Bodhakar**

J. Kolangaden

IT was an exciting morning in the Great City of Madura in the year 1608. Learned Brahmins were hastening to their assembly hall. The common folk too were gathering in their hundreds, for they also were interested in that morning's session, because they had heard much about "Roman *Sanyasi*" who had built his ashram, or *mut* as they called it, in their historical city. It was indeed a decisive day in the amazing career of the famous Italian Jesuit, Roberto de Nobili.

De Nobili had eagerly assumed the Indian way of life and was meticulously faithful to it, down to the last detail. He on his part had chosen India as his mother country, but would the Indian people accept him as their own? Everyone in that excited gathering was trying to answer that question in his own way, till Sivadharma, de Nobili's Brahmin teacher (mio carissimo maestro), spoke in his behalf so persuasively, that the learned assembly of more than 800 Brahmins, gave the verdict that de Nobili was a real sage, a true *Sanyasi*, faithful to Indian tradition. He was hailed as Tattva Bodhakar, the Teacher of Philosophy.

Thus was admitted into the bosom of Bharat Mata, scion of one of the noblest families of Italy. The Nobilis had held the highest dignities in both the Church and the State. Two Popes, Julius III and and Gregory XIII were closely connected with the family. An uncle and a cousin of Roberto were raised to the Cardinalate. His father Pier-Francesco was a papal general and the Lord of Civitella. Hailing from such an illustrious family, de Nobili perceived more quickly the difficulties which kept the higher castes, especially the Brahmins, from joining the Christian Communities formed at Madura and other places. These communities till then consisted chiefly of men of low ranks, of no education, and little refinement.

Becoming a Christian at that time was synonymous to becoming a *Pharanghi*, "a term, which, though meaning originally Europeans, had in South India been gradually restricted to the Portuguese, and finally came to indicate a drunkard, a vile man, without religion, without manners, without culture. In that sense Fr. Roberto was not a *Pharanghi*. He was a Roman by birth; and by caste—since he must have one—he was a Kshatriya".[1] De Nobili's Mission was to demolish the citadel of prejudices that barred the progress of Christianity in India, and to open the portals leading to the very heart of India. Hence in his eagerness to integrate himself in the Indian scheme of things, he called himself a Kshatriya, for that was obviously the Indian equivalent to the position his family held in Western Society. Later he allowed himself to be called a 'Brahmin Sanyasi,' in accordance with his profession as religious teacher. He never tried, as has falsely been said, to pass for a born Indian, he knew very well his complexion made it impossible.

If de Nobili was not an Indian by birth, he made himself one by adoption. "India was no longer the

Roberto de Nobili

* This article appears in commemoration of the third centenary of Roberto de Nobili, the great Italian Indologist, who worked and died in India on January 16, 1656—Editor.

[1] Rev. A. Sauliere S. J.: "Fr. Roberto de Nobili S. J.—The First European Indologist". *The Indian Historical Research Institute, Silver Jubilee Commemoration Volume.*

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country of his voluntary exile, she was his own country, and the Indians were his own people. The City of Madura was his city, and he was proud of it, for it was beautiful, rich, densely populated."[2] Tamil was his language, "copious, elegant, most beautiful".[3] He loved it and studied it, trying to discover behind the words the mentality of "his people." When he spoke to the children and called them '*thambi*' (little brother) he felt that they were indeed his little brothers. These attempts at Indianisation might be clumsy and very inadequate, but their meaning was not lost on his new countrymen. "They noticed his demeanour, his unfailing courtesy, his appreciation of their customs, his considerate way of dealing with them, his anxiety to do everything in the Indian style, so that in spite of occasional errors, they could never call him a *Pharanghi*."[4]

The dress of Fr. Nobili consisted of a long robe of a pale yellow (saffron colour) reaching down to his ankles. Over it he wore a shawl of the same colour. For footwear he adopted the wooden sandals. Like Indian sages, he kept a long, flowing beard. He wore also 'the thread' (Poonool) to which he added a cross. He bathed every morning and smeared his forehead with sandal paste. He took only one meal a day and it consisted of rice, vegetables, herbs and milk. From 1606 when he began his stay in Madura till his death in 1656, for the space of 40 years he never touched meat, eggs or fish, because "the Indians ridicule the idea that one can eat meat and at the same time keep chastity." Fr. Laietao S.J., who tried to immitate De Nobili's mode of life, and later had to give it up, describes graphically what a Westerner thought of his vegetarianism. "His disciples came to lay the table which was soon ready, for a plantain leaf spread on the floor served as table, table cloth, dishes and plates. I sat near that leaf on which his Brahmin cook served the supper. I began to eat, but in spite of my appetite, nature felt such a horror for those new preparations, perhaps also of this new system of eating with the fingers, that I had to force myself to swallow some morsels."[5]

De Nobili's *mut* was situated in the Brahmin quarters of the city, in the 'Agrahara'. Only high caste visitors were admitted to his presence,[6] and they found him sitting on the ground in Indian fashion. All those who visited him, even the noblest and the highest personages of the court of the Nayaks, bowed to him profoundly to indicate their desire to become his disciples. Having repeated this ceremony three times, they prostrated themselves on the ground, rose up and remained standing before him. Many were attracted to him by his mode of life and he allowed his followers to retain all their social and national customs provided they did not attach any religious or superstitious meaning to them. Thus was formed in the very heart of Hindu culture and learning in South India, an Indian Christian Community. De Nobili's followers proved once for all, that an Indian, on becoming a Christian, does not in any way cease to be an Indian.

From the beginning de Nobili was bitterly opposed by the Goan authorities. They condemned his method and loudly denounced him before the Pope. Like wild fire, the rumour spread in Europe that de Nobili, instead of converting Brahmins, had himself become a Brahmin. The sensation this news created is best seen in the public disputation held in Rome on the topic: "*Utrum linea appensa ad collum, corrumpi seu crinis intonsus in capite, sandalum in fronte, corporis ablutiones permitti possint Brahmanibus ad fidem conversis?*" Whether "the thread (*poonool*), *kudumi* (tuft of hair kept in a knot at the back of the head), sandal paste on the forehead and ablutions can be permitted to converted Brahmins?" The debate ended in favour of de Nobili, and decided that these customs were unobjectionable. Meanwhile the Pope had appointed a commission of three cardinals to study the question.

Finally on January 31, 1623, Pope Gregory XV promulgated the Brief *Romanae Sedis Antistes*, sanctioning the retention after conversion by Indian Christians, of 'the thread,' 'kudumi'—inasmuch as they are their national and social customs. The papal pronouncement is in conformity with the age old attitude of the Catholic Church towards the cultures of all nations, ready to appreciate and assimilate them, true to the international character of the Church. It was the triumph of de Nobili's persevering efforts; it was also the triumph of Christianity in India for the Pope made it clear that Christianity would recognise and preserve all that is noble and precious in Indian culture. Thus was formed the Tamil Catholic Community, which is Indian to the core, as the very names of Tamil Catholics proclaims; Durairaj, Jeya Raj, Gnanapragasam, Srinivasan, Santammal, Susila, Jayasili and so on.

De Nobili really appreciated Indian culture, and when the time came to build his first church, he built it in pure Indian style, with three naves, and columns of black granite supporting a terrace. The following extract, from his letter to his Provincial Fr. Laerzio S.J., bespeaks of his deep sympathy for Indian customs: "The Hindus are wont at the beginning of each year to celebrate a very solemn festival (*pongal*) to offer the new rice to the gods. It consists of cooking their rice with milk before an idol. According to them it is a disgrace not to be able to celebrate that festival. I allow our Christians to cook their rice and boil their milk at the foot of a cross which they erect for that purpose, and to their great satisfaction I myself bless the new rice which is to be used in that ceremony." No wonder, the community at Madura,

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[2] De Nobili's letter to C. Aquaviva.

[3] 'Bellissima, copiosissima, e molte elegante'. De Nobili to Card. Bellarmine.

[4] From the scholarly work on De Nobili, being written by Rev. A. Sauliere S. J.

[5] Fr. Laietao S. J., to Fr. Laerzio S. J. Provincial of Malabar Province.

[6] De Nobili did not accept the caste system with its religious significance.

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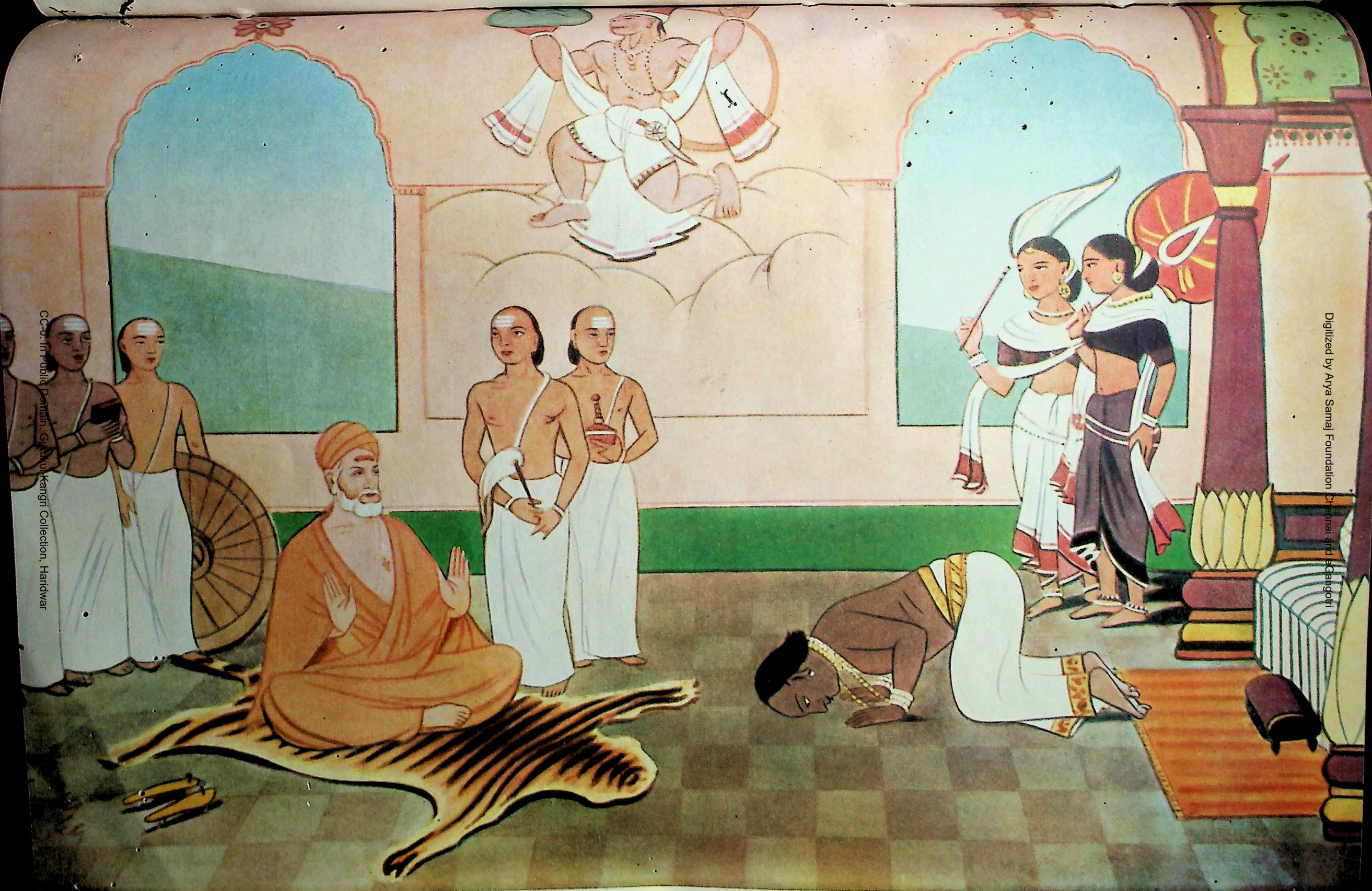

Fr. Roberto de Nobili, surrounded by his sisyas, is received by Ramachandra, Nayaka

Watercolour by Angelode Fonseca (Courtesy: Indian Historical Research Institute,

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under such a considerate pastor, progressed rapidly.

"Then when the time came, he took his staff and begging bowl and began travelling from Madura to Trichinopoly, from Trichinopoly to Salem, imparting to all as he went, the great love which was in his heart. People flocked to him from all sides with their problems, and his solutions were so clear, so satisfactory and so human that every day new disciples would cling to him."

The secret of his success was that he had actually opened the portals and entered into the very heart of India by assimilating her cultural and philosophical heritage. In the very beginning of his stay in Madura he wrote: "We imagine these people are ignorant, but I assure you that they are not. I am actually reading one of their books in which I learn philosophy anew, almost in the same terms as I studied at Rome, though of course their philosophy is fundamentally different from ours". During the course of his many discussions with learned Brahmins, he discovered some Pythagorean tenets in Indian philosophy, notably the notion of Transmigration. He noted also the platonic tendency in Indian thought. He gives precious information regarding the flourishing state of higher studies in Madura during the reign of the Nayaks:

"There are in Madura more than 10,000 Brahmin students, distributed among different masters, one having 200, another 300. To favour their studies and to enable them to apply themselves entirely to their work, the King of Bisnagar (Vijayanagar) and the Nayak of this city have endowed many colleges with a good income to support both professors and students, providing them and their families not only with their boarding, but also with clothing, so that while they study they have no other pre-occupations to abstract them from their work. Their teaching and lectures are most varied because they have many schools of thought."

He then mentions the six systems and Vedanta, and goes on to describe in great detail, the particular system taught in Madura, the 'Chintamani', a course which generally lasted for five years and was divided into three parts: evidence, science and authority.

De Nobili's own ambition was to open a college in Madura, and hence he perfected himself in Sanskrit which he says, "holds the same place in India, as Latin did in Europe during the middle ages". So thoroughly did he master the language as even to compose verses in it. He wrote a short summary of Christian doctrine "Sattya-Veda-Sara-Samgraham", a short poem of about 100 verses. He also wrote, life of the Virgin Mary in Sanskrit verse, the loss of which he always lamented. His knowledge of Sanskrit language and literature has been noted by such Sanskrit scholars as Max Muller, who wrote: "I can only speak of him as the first European Sanskrit Scholar. A man who could quote from Manu, from the Puranas, nay from the works such as the Apstamba Sutras, which are known even at present to only those few Sanskrit scholars who can read Sanskrit. MSS must have been far advanced in the knowledge of the sacred language and literature of the Brahmins"[7]. And Prof. W. Caland of Utrecht concludes a learned article on de Nobili with these words: "We feel deep admiration for his learning and knowledge of Sanskrit, for not only the Smrti literature was known to him, but also the Veda, at least one of its Sakhas: The Yajurveda of the Tattiriyas".[8]

De Nobili knew Tamil still better. With great assiduity he learned Tamil, read many of the Tamil classics, and learned by heart many verses from famous Tamil poets. He had mastered also many hymns which he could sing with such perfection and grace that all who heard him listened with great admiration and pleasure. His Tamil works already printed are *Gnanopadesam* (a complete treatise on Christian doctrine in three volumes), *Attuma Nirunayam* (a manual of psychology adopted to topics of special interest for Indians), and *Agnana Nivaranam* (Removal of Ignorance). Among his chief unpublished works are: *Dushanadikkaram* (Refutation of Calumnies), Manual of Perfection, Manual of Living, Marks of the True Religion, *Nitya Jivana Sallapam* (on Eternal Life—his first composition, superior to all his other works, in style and perfection of language), and two dialogues, one on Transmigration and the other on the Faith. Of course, his Tamil diction is not pure according to modern standards, as he followed the usage of his day which admitted a rather free use of words of Sanskrit origin. He composed also a number of melodious hymns '*Kirthanais*', the sweet strains of which are heard in Tamilnad even to this day. He was proficient in Telugu too, and he himself translated many of his works in this language.

His works proclaim how deeply he assimilated Indian culture and thought. The similes he used are just those which any Indian poet might have used. In his 'Sattya-Veda-Sara-Samgraham' the excellence of truth is described: "As musk is the sweetest of perfumes, the lotus the most beautiful of all flowers, the ruby the most precious of gems, so is truth the most excellent of all things". Again he stresses the unity of God: "A great value is set on a single pearl, and much light shines from the sun, and much truth comes forth from the mind, so also has the existence of many worlds its cause in only one God. There are not two kings in the same country, nor two captains in the same army, nor two heads on the same body, nor two masters for the same household"[9].

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[7] *Lectures on the Science of Language*, London 1866-67.

[8] "Robert de Nobili and the Sanskrit Language", *Acta Orientalia*, III p. 51.

[9] एक रत्ने सर्वमौल्यं एक सूर्येऽखिलप्रभा ।
एक ज्ञाने सर्व विद्या एक सर्वेश्वरेधरा ॥
राजद्वयं चैकराज्ये सेनायां नाधिपद्वयम् ।
एक देहे शिरोद्वन्द्वं न गृहे गृहपद्वयम् ॥

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De Nobili was deeply sympathetic to Indian thought, but when he has to disagree he does so, definitely and unequivocally. In Chapter IV of '*Agnana Nivaranam*' when speaking against the abuse in popular Hinduism of statues, he begins with the remark, "though, reluctant to speak against the gods of the People", and in Chapter IX of the same book, disproving the 14 worlds of mythological cosmogony, he clearly states 'his reluctance to wound the minds of the scholars of this country'. Even when he disproves some tenets of Hindu philosophy, he was careful to do it gently and tactfully for he maintained that the advice given in Exodus[10], "Do not speak against the Gods" applies even to pagan divinities, because speaking against them, instead of doing good, prevents the conversion of souls. "When we wish to drive darkness out of a room, we do not waste time making a great stir trying to expel it with brooms; we light a taper and darkness vanishes by itself. Reach the pagan heart by winning its esteem and affection; and bring in the taper of truth, and all darkness of idolatry will vanish without trouble."

In fact he had searched the Hindu Scriptures for indications of Him whom he announced to his dear Indians as their Redeemer. He was happy to agree with the great Indian thinkers. He gladly notes in *Attuma Nirunayam*. Chapter XXVI that some Indian sages have taught Heaven to consist in 'Salokyam', that is, actual vision of God, which is very near to the Christian concept of the Beatific Vision. In Chapter I, Volume III of *Gnanopadesam*, he quotes approvingly Sankaracharya, Bharthruhari and Manikaya Vasakar. His correspondence enhanced the prestige of India in the West, and his works are rich mines of information on Indian topics, and the publication of his works will aid considerably all Indologists.

De Nobili's proficiency in Tamil, Telugu and Sanskrit was a source of wonder to indigenous scholars, and his companions considered it almost miraculous. Not many can equal him in the grace of his discourse, the energy of his expression, the fluency and the eloquence of his conversation. In the art of catechising he reached such perfection that learned men who heard him compared him to the great St. Ambrose. In all his discourses, he was always as practical as he was scholarly. "When his eyes, tired out by his endless search in palm leaf manuscripts, refused to serve him any more, and he became utterly blind, he did not desist from his labours. Surrounded by faithful secretaries he would dictate to them the things he kept in his heart, and such was his memory that occasionally he would refer not only to books he had written, but even to books he meant to write quoting chapter and verse."

"Repeated attempts were made to withdraw him from the austerities of his ascetic life. Well intentioned friends would have liked him to retire to some coastal town where his shattered health could be attended to. They succeeded at last in transferring him to Jaffna in Ceylon, but he felt homesick, and begged to be allowed to pursue the path he had chosen. When at last he consented to retire to Mylapore, it was not in the town, among those of his own race that he chose to spend the last years of a long life, but outside the city, in a little hut among his Indian disciples . . .

"Tradition has kept the memory of his tall emaciated figure when in the last days of his life he would, leaning on his staff, grope his way towards the shore to pray at the shrine of St. Thomas. The crowd respectfully made way for him and greeted with their affectionate *namaskaras* the old ascetic they loved to call Santo Padre."

Fr. de Nobili died near Mylapore on January 16, 1656. No tombstone marks the place where he shed his mortal coil. No Tamil town or village can claim his remains; he belongs to all, he needs no monument, no inscription. He is 'Tattva-Bodhakar'.

[10] *Exodus* ch 22-/28 'Ne detrahas diis . . . . '

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The Second Inter-University Youth Festival

Muriel Wasi

THE Second Inter-University Youth Festival organised by the Central Ministry of Education was inaugurated by the Prime Minister on October 23, 1955, and the inauguration was attended by about 1,200 students, several hundred educationists and educational administrators and a variety of people, who though not directly involved in education, regard it as one of the main planks of the new India.

The student is in a rather special sense the pivot of that plank and upon him, his initiative, his character and his sense of responsibility depends the shape of the India of tomorrow. He is the embodiment of the vitality of the country; he is a symbol of our faith as of our hope; and he carries with him such an abundance of laughter and goodwill that he is a very satisfactory pivot round which to make a plank of nationhood revolve.

The first Inter-University Youth Festival inaugurated in 1954* brought so much delight to students and the public that attended it, that festivals such as this were bound to become an institution. Every undertaking of this kind implies intricate and farseeing organisation and the main problems were tackled vigorously and with pronounced success.

It was recognised that many things were not satisfactory at the first camp but that with more adequate staff and a longer period of preparation these defects could be remedied. Organisation at the second Inter-University Youth Festival on the basic essentials was noticeably better. As before, the approach to the Camp consisted of an Avenue of Youth with its heartening slogan "Lead On, Youth", and formed by the banners of the 25 Universities that were represented at the Festival.

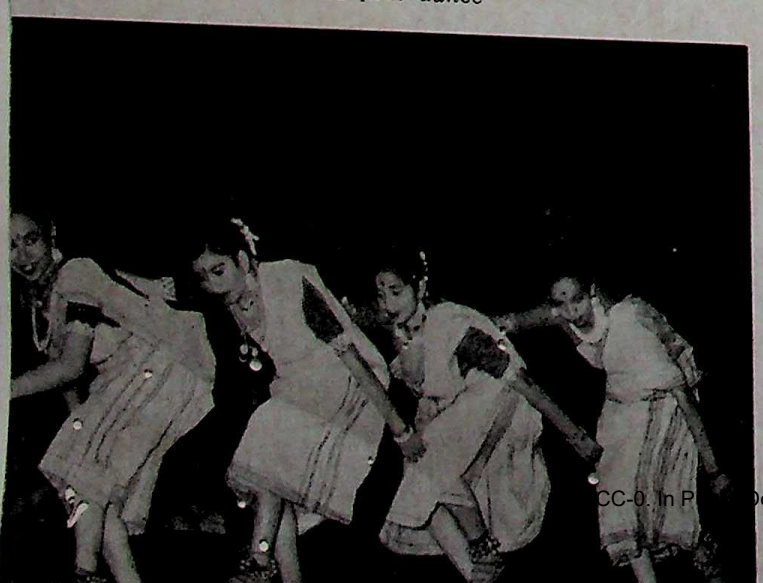
As before, the camp was a city of tents, white in the morning mist and, as the day wore on, dotted over with moving student-figures. Towards evening and shortly after the performances were over, the students would gather at the cafeteria or outside the tents to dance or sing with hand-clapping for accompaniment. Nothing had changed in the atmosphere, but basic conditions were better. A real open-air theatre had been constructed in a period of fifteen days. It was from every point of view an achievement.

Everything at an Inter-Student Youth Festival turns on a programme of activity. The festival was exactly what its name implied—a feast of dance, music and drama. Its direct function was to entertain students with performances by students in dance, drama and music. Its indirect purpose was to bring together some 1,200 young men and women of University-going age from various parts of India, and to make them aware, by a process of mixing, of the dimensions of their country and, by inference, of some of her problems.

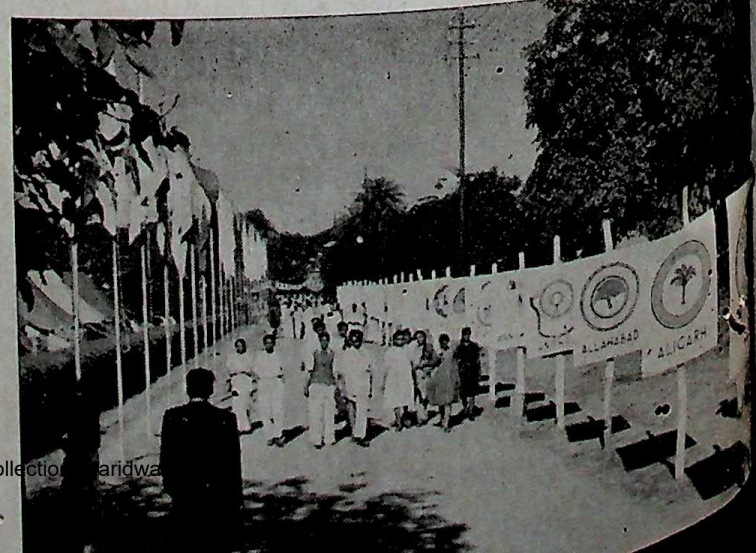
It was not the purpose of the organisers to iron out diversities and to produce a standard type of human being. Far from it. For a festival of this kind tends to stress local and regional cultures and to assist their development. The purpose of the organisers was to emphasise that underlying the diversity of regional cultures and art, lay the basic unity of a nation. In the second, as the first, Inter-University Youth Festival this purpose met with pre-eminent success. Students,

* See the March of India, Vol. VII, No. 4, Pages 33-36.

A folk dance



Flags and insignia of various participating Universities



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teachers, the informed and the lay public, all commented on the fact that the Talkatora Gardens that housed the festival were a miniature India.

A student from Baroda University said: "I was proud to be a member of this vast concourse of students coming from all parts of India. It was an enriching experience to meet students with different ideas and outlooks, cultures and values. It made me aware of the oneness of India despite her bewildering diversity of cultures." A student from Simla wrote: "For me, the Festival was not enacted inside the open-air theatre but outside it. We lived together, ate together, talked together. It seemed to me that we were the varied beads of a necklace strung together by a cord that was long and strong". A teacher leading a troupe to the Festival from remote Kashmir, said: "In the Talkatora Gardens, I felt the hugeness of my country; but despite our varying clothes, languages and habits, we were one. The Talkatora Gardens were a miniature India."

It will always be a matter for speculation who is responsible for outstanding achievements in music and dance—the university or the individual, or group of undergraduates. Not every University in India has a faculty of Music. Very few Universities list Dancing among their curricular activities. Nevertheless, the standard of classical music and group dancing was sufficiently high at times to compare with professional performance in these arts.

In instrumental music Jaya Basu of Calcutta University and Debabrata Chowdhry of the same University were outstanding. There were fine violin recitals by Kamalesh Kodesia of Lucknow University and Miss Langwarker of Baroda. We had spectacular performances on the Veena in the Karnatic style by V. G. Subramanian of Annamalai University and on the tabla by G. S. Tade of Saugar University. The singing by men was not of such a high standard as was their instrumental music but women sang with great sensibility and technical excellence.

But by far the loveliest and most excellent programme of cultural activity for many was the group dancing. This was generally of a remarkably high standard. There are likely to be purple patches in all student performances but on the whole these were few and well co-ordinated performances were presented in this part of the festival. The most outstanding group dance was given by the Gauhati team. This had the purity of the Manipuri style at its best and team-work was excellent. Another memorable group dance was staged by Nagpur University with haunting music and unusual rhythms to form an intricate pattern of dance. The harvest dances of Poona and Karnatak were well directed and practised and Utkal and Banaras were both enchanting.

Autographs were signed and friendships affirmed at the close of the session

A chorus from Lucknow University

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The drama at the Youth Festival was like the curate's egg, good in parts. One of the main problems in all drama in India today is the choice of a suitable play. Difficult under all circumstances, for our audiences have widely differing tastes and capacities for understanding, this is especially difficult when plays are performed for student audiences. Problems of language complicate the over-all problem of choice for where dialogue is not understood, a synopsis, however, well presented, cannot create that burning interest in what is enacted that is essential to the complete enjoyment of drama.

Most students could follow plays in Hindi and English but few from outside South India could follow Telugu, Tamil and Malayalam, and few outside Orissa and Bengal could follow Oriya and Bengali. Add to this the fact that the plays chosen were sometimes in themselves excellent but unsuitable for student audiences. Especially was this so of Osmania University's choice of Shaw's "The Dark Lady of the Sonnets". For anyone who truly understands dramatic dialogues, this is dramatic dialogue at its best, and it does not matter that we are not English or vastly interested today in Elizabethan England—the play's the thing. Also, Shakespeare will always be with us in India and the play centred round Shakespeare. But the dramatic dialogue called for a mature and listening audience.

Student audiences are proverbially impatient. Capture their attention, get a grip of their imagination in the first few minutes, or suffer their interruptions with irrelevant clapping, cat-calling and loud interjection. We had an example of the immediate grip that a play took of the audience in Nagpur University's "The Doctor's Dilemma"—a play by a student playwright, Krishnamurthi, in which laugh upon laugh, incongruity upon incongruity, all working towards an inevitably happy conclusion were just what a student audience wanted.

A judge of drama should never take his cue from a responsive and entertained audience; but a judge must be lost to all sense of theatre who is unaware of the reactions of the audience to a play. Poona University's first prize winning *"Satara Varsh"* a difficult, thought-provoking drama of social conflict would have been rapturously received had it been in Hindi. It was played, as the playwright intended it to be played, in Marathi which not many understood. Nevertheless, the play worked itself calmly out to a finish with acting of so high a level of sensibility, and production so efficiently executed that there was no sense of lost illusion.

The moral of this is that if a play is well chosen, it can surmount difficulties of language.

There were other plays that though well chosen were badly produced or stage-managed. One instructive instance was Lucknow University's *"Naya Shehr"* with a good plot intelligently resolved but badly executed. There were far too many entrances and exits, too much movement and too little concentrated emotion.

There are other things that call for constructive

Shanta Pande of Banaras University and winner of First Prize in a dance pose

comment in an evaluation of the festival's drama, such as, the need to learn to produce the voice for an open-air theatre so that there need be no recourse to microphones that irreparably damage stage voices; the need to speak naturally and not to declaim in ordinary conversation; the need to avoid set caricature in servants and *banias*—and this is an important point for all student-producers. A free country should produce free servants who are neither cripples nor buffoons. Play after play indulged in the set convention (almost Greek) of the servant as a limping buffoon. It might almost be worth our while to write and enact a play that immortalises the dignity of servants. Nor is every *Seth* an over-fed monster. Khwaja Ahmad Abbas's *"Atom Bomb"* played by Aligarh University was ruined by the caricature of a *Seth* and the inability of the cast to create the atmosphere necessary to such a play. A few servant-actors and actresses, nevertheless, distinguished themselves—there was a *Dhoban* in *"Naya Shehr"* and a maid servant in the Oriya play enacted by Utkal University. Both were studies in the amiable and philosophic humanity that we recognise upon sight.

(*Continued on page* 38)

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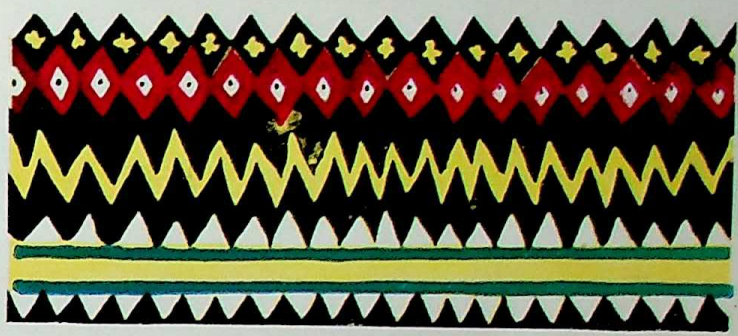
The Textiles of Manipur

Padmini Sen Gupta

THE adage that Adam delved and Eve span is never more truly demonstrated than in Manipur, where the art of spinning and weaving comes as second nature to every woman, be she a *badralog* or villager. In fact, women create exquisite textiles, not merely to earn a supplementary income, as is the case in other parts of India, but because the products of their cottage industries are the mainstay of the family.

Wherever one goes, one hears the pleasant sound of the shuttle flying from side to side of the loom. Everything which is required for the home in the form of textiles is woven by women, even mosquito nets, apart from a regular supply of goods which, when ready, are taken daily to the women's market in Imphal, and sold there. Nor is this daily *hatt* in the capital of Manipur the only women's market. When we drive to romantic Moirang, the seat of all Manipur art, drama and dancing, there sit the women, selling their wear. On the picturesque road one can find women, dressed possibly in the clothes woven by themselves, carrying bundles of textiles to the market.

The costume of the Manipur woman is simple but colourful. She wears a *fanek*, or thick homespun *lungi*, bound tightly under the arms and reaching down to her ankles. Her shoulders are usually bare, or graced with a tight-fitting *choli*, and a *chaddar* of the brightest hue, green, yellow or scarlet, is flung over her shoulders and head. A favourite colour scheme, though not so gay, is the salmon pink *fanek* and white muslin *chaddar*. Women wearing these pastel shades look peculiarly chaste and modest besides their gayer companions.

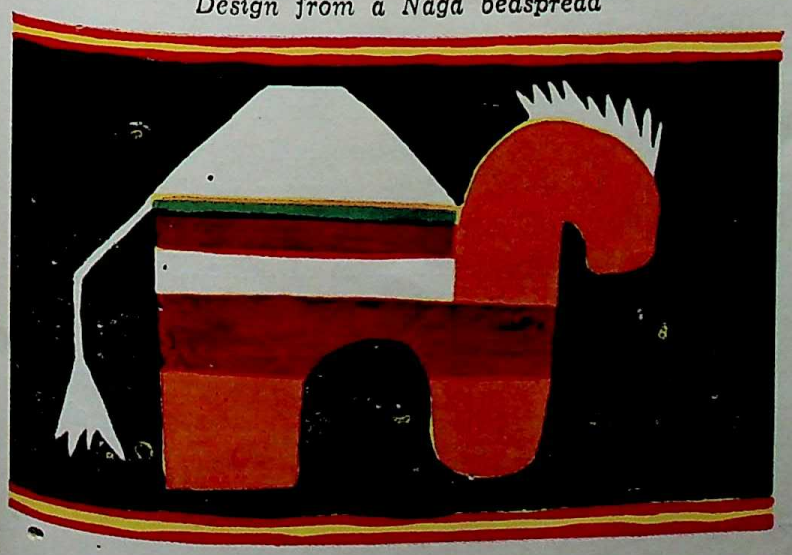


Border of a table-cloth, Manipur

The dance costume, which is now familiar in all parts of the world, with its crinolined skirt, gaily embroidered blouse, filmy *chaddar* and gleaming head-dress is something which never loses its attraction and charm. These costumes are the work of humble and poor hands. Women work at these skirts and blouses and head-dresses, in the village huts from where the dancers buy their dresses.

The rich and fertile valley of Manipur is three miles long and two miles wide. The climate and soil are ideal for the growth of mulberry trees and the rearing of silk worms. Both in Assam and Manipur, weaving is the main occupation of women, and in Manipur especially, they are the main bread-winners. Every village hut has its loom. The heavy four-poster loom is now giving place to the less cumbrous flying shuttle, and modern methods are being employed, which will offer much needed relief to women in carrying out their arduous task. The *pat*, *muga* and *endi* silks of Assam are not uncommon in Manipur, and

Design from a Naga bedspread



Design from a Naga cushion-cover

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Gorgeous costumes of Manipuri dancers

In Manipur, every family has a handloom

the silk worms which produce this thread are reared by the village women, as in Assam. In fact the women of Manipur are entirely responsible for their textiles, for men think it beneath their dignity to spin and weave. Even the selling is the concern of the women.

The richness of the textiles found in the women's market of Imphal is further enriched by the weaving of the Nagas. The thick *chaddars* of these hill tribes, mostly woven on a black background, and the heavy bedspread, with designs of horses, elephants, cocks and butterflies, in white green, yellow and red on black, form a rare combination and are outstanding in the skill of the handloom artist.

Neither are the textiles of Manipur confined to the requisites of indigenous wear. Housewives in all parts of the world are fast discovering their worth and the lovely products of the Nagas and of Manipur now grace drawing and bedrooms all over the world, in the form of cushion covers, table cloths, curtains, furniture material and bedspreads. In fact, few other textiles can compare with those of Manipur in their strong weave, rich colouring, and original designs.

☆

THE SECOND INTER-UNIVERSITY YOUTH FESTIVAL (*Continued from page* 36)

Costumes generally left something to be desired. It is true of costumes as it is of decor that they are aids to the creation of illusion. Bad or slovenly costuming, unsuitable decor hinder the creation of illusion or wreck it but no play was ever made by costumes and decor. *"Toofan"* from Bombay University had excellent decor and started out with the advantage of an atmosphere achieved by decor and good sound effects. It did not progress because the play in effect said nothing. The old injunction that "the play's the thing" is still the most valuable counsel to follow in theatre. Without a play there can be no drama, for "words, words, words", decor, costumes, do not make up for the conflict and characteristic action arising out of conflict, that are of the essence of a good play.

So much for the Festival as a feast of music, dance and drama. It is easy to assess its success as a cultural programme for students, for students are not good at concealing their feelings and the enthusiastic applause that attended performances of dance, drama and music were sufficient testimonial to the students' enjoyment.

What of the festival as an all-round experience? This is so much a matter for individual judgment, individual response and individual sensibility, that it is difficult to answer categorically. But sufficient has been said of the festival as a social and educational project and as a cultural programme for it be inferred that for any student who chose to profit by it in a many-sided way, it was more than a mere festival of dance, drama and music. There is a great deal in the theory that there is no better medium of education than joy. At the second as at the first Festival, joy appeared to be the immediate end, not education. It may be for just this reason that the festival as an all-round experience is likely to have been educatively profitable.

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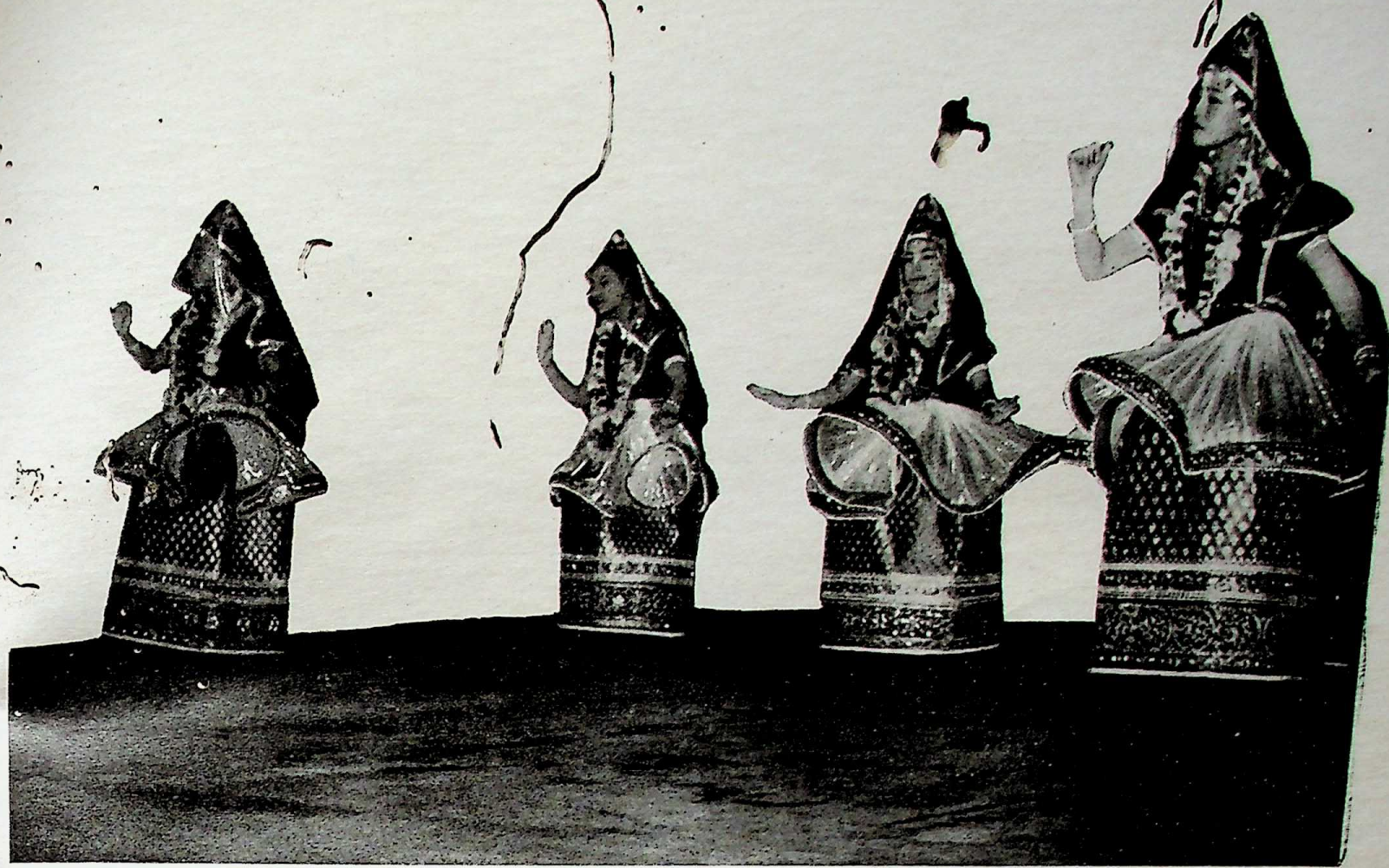

Manipuri Raslila dance

National Dance Festival

J. Vijayatunga

IT was a happy idea on the part of the Bharatiya Kala Kendra in co-operation with the Sangeet Natak Akadami to inaugurate a National Dance Festival to coincide with the Indian Industries Fair. There is in the Capital always a group of dance enthusiasts both Indian and foreign, and this number was greatly increased during the festival that was held during November and the first two weeks of December 1955. The Arts Theatre at the Fair was, I believe, one of the best patronised.

After having seen the various dances, solo, group, regional, I came to the conclusion that two forms of dance are authentically classical and interpret the religious emotions of India's millions through mime, gesture, dance, song and music. These two are Bharata Natya and Manipuri.

We; in this country are indeed fortunate that our arts are intertwined with religious worship. The best art of Europe too was religious—the cathedrals which gave work not only to architects and to artists in stained glass, but also to painters and sculptors. Much of European classical music is religious. Some of the more outstanding compositions of contemporary European composers are also religious. With us this has been traditionally so for centuries.

Therefore, though the impact of materialism we are experiencing is admirably conducive to vulgarisation and though assiduous attemps are being made to vulgarise Indian dance and music through commercialisation, as in the cinema, the vulgarians are up against tradition and the good taste bred out of that age-long tradition.

Bharata Natya traces its origin to Bharata's Natya Shastra, and for understandable reasons this particular dance-form was developed in South India. Due to foreign invasions to which the north was subject much of India's Vedic culture came to be concentrated in the South. In the Tanjore district—Tanjore, Madura,

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Kumari Shanta Rao in a Bharata Natya pose

Kumari Roshan in a Kathak dance

Chidambaram are famous for their temples—Bharata Natya has been cherished more than anywhere else. No doubt the Tanjore kings were patrons of it. But with the lapse of these dynasties, Bharata Natya fell into disrepute and might have died altogether but for the Temples where the Dance became a part of the ritual. Certain families, especially in Tanjore, kept up, in the face of neglect, interest in Bharata Natya and in recent years the names of Meenakshi Sundaram Pillai (who died recently) of Pandanallur, his son-in-law, Chokkalingam pillai, Ellappa, have been prominently associated with the revival of this dance.

The Dance, as the name signifies, is intended to portray *Bhava* (Emotions), *Raga* (the tonal element), and *Tala* (musical beat). *Bh-Ra-Ta* Natya is a Dance which combines and in which is combined all these three aspects. Hence music, song and dance are the requisites of Bharata Natya.

Convention and usage have given Bharata Natya a particular repertoire and most dancers conform to the prescribed pattern which consists of (*Alarippu* (invocation), *Jatisvara* (introduction), *Sabda*, an evocative dance-pattern. Pure dance (*Nritta*) and emotions mingle to form Nrittya. This is followed by *Pada*, usually an episode strung on a song like *Krishna Nee Begane* (Krishna, comest Thou, soon). Dance patterns where *Abhinaya*, emotions expressed by look and gesture, follow the *Pada* : and last, comes *Tillana*, a more lyrical concluding dance-pattern.

The music is based on compositions by the famous classicists of the Karanatic School such as Thiagaraja, *Kshetrayya* (also known as Kshetragna), the Andhra composer who lived at the Tanjore court, and by more recent composers like Gopalakrishna Bharati and Swathi Tirunal. The musical instruments are the usual South Indian instruments, *Veena, Tambura* (Strings), Flute (Wind) and *Mridang* and Cymbals (Percussion). In recent times those strident intruders, the harmonium and the violin (an instrument that is foreign, though stringed instruments were in use in India long before the violin was invented in Europe) have also been accepted by certain *Nattuvanars* (Music Directors).

At the Dance Festival Shrimati Balasaraswathy, Akadami award Winner, 1955, maintained her reputation without fear of any rivalry. This dancer emphasises the Abhinaya aspect of Bharata Natya and in that she excels. She is also the only dancer who does not depend on make-up, paint, and over-decking with jewellery. Bharata Natya has prescribed certain minimum jewelled ornaments for the dancer, but today

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there is tendency on the part of all dancers to o rdeck themselves with *bijouterie*. This is probably du to the pernicious influence of the films. Her mother, S imati Jayammal, rendered the songs (as at all her perf rman-ces) and Shri Ellapa was the *Nattuvan r*, at Balasaraswathy's recital.

With Kumari Shanta Rao we com to an accomplished Bharata Natya dancer who does not follow the prescribed pattern always. What liberties she takes are the results of a lifetime of knowledge, for even though she is still young, she has been studying dancing from the age of twelve. She has introduced a vigour into her dancing that is refreshing though it might upset the more conservative devotees. This is not because she cannot be as alluring and sinuous as any other dancer but because she has certain theories about the function of the Dance. But in her rendering of *Mohini Attam*, that rare dance-form of Malabar, she is unexcelled and captivates everyone. Kumari Shanta, it may be added, was a pupil of the late Meenakshi Sundaram Pillai.

Another disciple of the same Guru who took part in the Dance Festival was Mrinalini Sarabhai who also has a long record as a dancer. Her forte is not *Abhinaya*, but in Nrittya she is a highly accomplished dancer. A word of praise must be given for the taste

Shrimati Balasaraswathy in Bharata Natya dance

The quick tempo of Manipuri dance

with which she had arranged the stage and for the dignified look of her orchestra.

Shrimati Sarala Sahgal, a well-accomplished Bharata Natya dancer, gave a full Bharata Natya recital at the close of the Festival. She is a disciple of the well-known Tanjore *Nattuvanars*, Shri Govindaraj Pillai and Shri Mahalinga Pillai, who themselves directed the orchestra at her recital.

We were also given the opportunity of seeing the Kuchipudi School of Bharata Natya. The tempo of their dances is faster than usual but the general effect was pleasing. They were able to present only their young pupils, who all show promise, particularly Kumari Rajyalakshmi.

Manipuri, though prominent in its present form during the last two centuries, has been a part of the Dance of the North-East provinces from time immemorial. The folk aspect of Manipuri has been there from very ancient times. *Laiharoba* is a puja dance, and from it are derived other group dances with a theme such as *Khamba-Thoibi*. *Khamba-Thoibi* patterned on Siva-Parvati motif is *Tandava*, but Manipuri proper, being the Radha-Krishna legend through

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dance and song, is mostly *Lasya*. There are a few Tandava dances such as Krishna Visharad.

Manipuri is essentially the celebration of Sri Krishna and the enactment of his love-episodes with Radha and the Gopies. *Raslila* has acquired through the centuries an imposing legend which introduces Sri Krishna in the form of Govinda descending upon Manipur in response to the prolonged devotion of Manipur's legendary King, Bhagyachandra Jaisingha. Manipur being the easternmost part of Bharat, the myth-creators of ancient times linked *Usha* (Dawn) with Manipuri. Such dances as Chingkheirol are dances in honour of the Dawn. Dancing is in the blood of the Manipuris.

I am glad to add that violins, harmoniums and other foreign instruments have not yet invaded the Manipuri orchestra. The *pena* or *israj* with the *Pung* (drum) form their instrumental orchestra. A singer or two, complete it.

The Dance Festival featured two troupes, one from the Imphal Dance College and the other from Imphal *Nrityashram*. The performances of both troupes were delightful. The dances of the respective Dance Directors with the *Pung* were in every way aesthetically satisfying.

Kathak associated with the Mughal courts, must have had an older origin, but the current presentation of it by the two schools, Lucknow and Jaipur, leaves much to be desired. The *bols* of Kathak are capable of being strung together to give continuity to a dance programme, but the convention is to dance each *bol* separately, and for the dancer, and sometimes for the accompanying *ustad*, to give a description of the *bol* before the dancer dances it. For this reason, Kumari Roshan and Shri Brij Mohan Maharaj who danced Kathak, on two separate days, failed to enchant us.

Kathakali finds an increasing vogue today outside Malabar. The Kathakali dancers who went to China with the cultural delegation have earned high praise for themselves and for India. The seventy-six-year-old Guru, Kunju Kurup, is still active both as a teacher and a dancer. There was an enthusiastic response for the Kathakali troupe's presentation of such dance-dramas as *Mohini-Rukmangada* and *Bali-Vijaya*. Krishnan Nayar, Chathunni Panikker, Karunakaran Nayar, the well-known exponents of this dance-form, added to their reputation by their performances during the current season. The vocal parts in Kathakali are as important as the dancing and instrumental music the least important. As such there is no need for the use of that intruder, the harmonium, in Kathakali.

Of the group dancers I must say a special word of praise for those from Seraikhella. They dance with masks on and after watching this troupe of masked dancers my prejudice against men impersonating women was somewhat lessened. With their masks the Seraikhella dancers performed with a grace and skill that was perfect. I understand that most of these dancers have to work for a living at other trades, and that Mangala Prasad Mahanty, their best dancer, works in the boiler room of a factory in Jamshedpur. It is to be hoped that the State will see to it that Ustads and Gurus remain in their villages and continue their noble work without migrating to towns and that those devoted to the dance are enabled to devote themselves to their vocation without fear of unemployment.

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(A Short Story)

The Coconut

Ruskin Bond

I HAD only two days to spend in Dehra Dun and they were to be busy days: my small cousin had to be admitted to school, I had to see the estate agents about the sale of our old house, see someone else about an old debt and, if I could collect the money, buy an orchard of *litchee* trees. Being but twenty, I didn't relish all this responsibility, and wished my father could have attended to the business himself; I meant to get through it all as soon as possible, partly because I didn't like doing it and partly because I had to leave the next evening in order to be in Delhi in time for the start of my college term. I had left my cousin in his school and, on the way back to my hotel, noticed a barber-shop. Instinctively, I felt the nape of my neck. I needed a haircut.

The barber-shop was a small establishment, one of a row of refugee shops that had sprung up a few years ago. A boy, who appeared to be in the employ of the barber, sat on the front steps, dozing peacefully. He was barefooted; his shirt was torn and his pyjamas too short; but he had a healthy face, half lost in a lot of unruly hair. When he heard my footsteps he jerked himself awake, sat upright, and gave me a funny salute.

I presume the salute was a sort of welcome to customers. The boy didn't seem to have much work, because the barber only called him once during my session and asked him for a glass of water. I had quite a comfortable haircut. While I sat back in the chair, hands in my pockets, gazing abstractly along the shelves of pomades and creams and lotions my fingers came into contact with some round, smooth objects which I soon recognised as marbles. They were my small cousin's. He had asked me to keep them for him and I had forgotten to give them back; now he would never get them; I certainly wasn't going to return to the school just for the sake of—I counted them—returning four marbles. So I toyed around with them for a while, until the pomade-rack once again attracted my attention.

When the barber had finished with me, I fished in my pocket for the money. The marbles came out with the change.

The barber smiled tolerantly.

"My little cousin's," I hastened to explain.

"Oh yes, sir?" He obviously didn't believe me; it was clear he considered me a marble-collector.

"I'll give them to your errand-boy," I said.

The boy was still on the steps. Winding a long line of twine around a twig. When he saw me looking at the twine, he smiled and said, "It is for fishing".

"Where do you fish?" I asked.

"In the river, five miles away. I go on holidays early in the morning."

"On foot?"

"Yes."

"On your own?"

"Oh, yes. Fishing is no fun unless you are alone."

Because of my friendly approach, he didn't try to be deferential. He continued winding the ball of twine, probably wondering when I would be on my way.

"Well," I said eventually, "I don't suppose you play marbles."

"Oh, I play marbles," he said. "I am the marble champion in the bazaar. You want to see me play?"

"Not now," I said. "I was just wondering if you would like to have these."

I put the marbles in his hand. He dropped them in his shirt pocket, said "Thanks", and continued rolling the ball of twine.

"Well," I said awkwardly, "good-bye".

I settled with the house agents that afternoon, and the next morning managed to collect half the money my father had lent to a client; that left the *litchee* trees. It was my lunch time, and I decided I would hurry back to the hotel, have a quick meal, and then get down to the business of the trees. I had to catch the six o'clock train, so I didn't have much time to waste.

As I neared the barber's shop the boy, who was again on the steps as though he had never moved from them, waved to me. He was smiling cheerfully, and I smiled back without slackening my pace. But he beckoned me to him and I had to stop. He held a big wet leaf, in which were slices of coconut.

"Please have," he said, extending the leaf to me.

I didn't have time to stop and eat coconut with anyone, and I said, "No, thank you" in a rather brusque manner, and walked on.

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He held a big wet leaf in which were slices of coconut

But as I passed the boy I saw his face. It bore a hurt and angry expression.

I hesitated, slackened my pace, wondered if I should go back and take the coconut, then decided I couldn't be bothered, and hurried on. But I felt guilty, and couldn't get the boy's expression out of my mind. I decided that when I'd had my meal I would go back to the barber's shop and speak with the boy, even eat his coconut.

I didn't enjoy my meal, and hurried through it; I was still feeling ashamed of myself. But, when I returned to the barber's shop, the boy was not there.

"Where is your boy?" I asked the barber.

"He went home. He wasn't feeling well, or so he said. There was not much work, so I let him go. I am not very strict, because he only gets eight rupees a month. Why, is there anything you want to see him about?"

I felt slightly embarrassed. I did not know how to reply. It would sound ridiculous if I told the barber I had come only to apologise about a piece of coconut.

"I—I found some more marbles," I said.

The barber laughed. "You must be here on holiday, to bother about such things."

"Yes," I said, "I am on a holiday."

I thought about the *litchee* trees and the train at six o'clock; but the boy's face, hurt and angry, haunted me, and I was determined to find him.

"Tell me where he lives," I enquired. "I have nothing to do, and have to go to the bazaar anyway."

The barber told me the name of a shop in the bazaar behind which the boy lived with his mother.

I found the shop, a general store selling everything from nails and ribbons to fireworks and sacred pictures. To get to the rear, I had to go down a short alleyway. It was almost entirely blocked by a sleepy buffalo, stretched out on the ground. Behind the shop was a courtyard, across which fluttered lines of drying clothes. Three children, one of them a girl, were playing hop-scotch.

I asked for the boy's mother, but was told she was at work; she had a job as an ayah in a European family. I asked for the boy.

"He's gone fishing", said the girl.

"Isn't he sick?"

"I don't know", she said. "He has gone fishing".

"When will he be back?"

"At night."

There was nothing I could do but leave. I wouldn't see the boy today, or ever again. I could picture him sitting alone on the banks of a stream, his hair tousled, his eyes dreamy, his line dangling in the water.

"Does he ever catch any fish?" I asked.

The girl thought hard, but didn't seem able to remember any occasion on which he had brought back a fish. One of the boys said :

"He found a turtle once. We kept it here in a bucket for three weeks, but one day it got out and walked away...."

"May be he eats the fish before coming home."

"I don't think he ever caught a fish," said the girl. "But he is a good fisher."

From the window of the moving train I watched the countryside. We passed villages of mud huts, fields of corn, areas of thick forest. Once we crossed a river and, as the train rumbled over a small bridge, I looked downstream, straining my eyes, but of course I did not see anyone fishing.

There were many things to think and worry about: my father's house, the *litchee* trees, the new term at college, my future, the future of my country, the future of the world, wars, bombs, money, health, home....But just now I was thinking and brooding over only one thing: a dirty piece of coconut; and seeing only one thing—a suddenly unhappy face:

And I decided that one day, some day, I would go back to Dehra Dun for a day or two, find the boy who worked at the barber's shop, and sit down and eat coconut with him.

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Tribals and the Firmament

Victor Rosner

IN the Tribal concept of "the first beginnings" there is no night. "Before the moon was made the sun alone was in the sky and did not set". "Haram"—The Old One or Singbonga—the Supreme God of the Mundas, took pity on "the son of man" who worked and fed 'now". He knew no rest because there was no night. The Old One, ageless, because he was before all, went to the sun. He commanded the sun in these words: "For as long as thou dost shine, O Sun, for so long also do thou hide thyself. Whilst thou art hid man will see not. He will rest."

The sun went down as commanded. Darkness covered the face of the earth. It was the first night. Man had to stop work. He groped his way home from the fields. He stumbled. He fell. At home he slumbered through the darkness. It was his first rest.

The Old One came to "the son of man" after the first night. "From to-day work when there is light; when it is night rest. On the morrow work again. When night comes rest again." And so were "to-day" and "to-morrow"—the time of light before the night comes, and the time that will come after the night—given to man by Singbonga, the master of all things animate and inanimate.

"I have understood, O Gomke, but on my return home in the night I stumbled and fell. I could not find my way for it was dark. Do what you can to make it light for me." The Old One heard the plea of man. He made the Moon to light the night and help man on his way home.

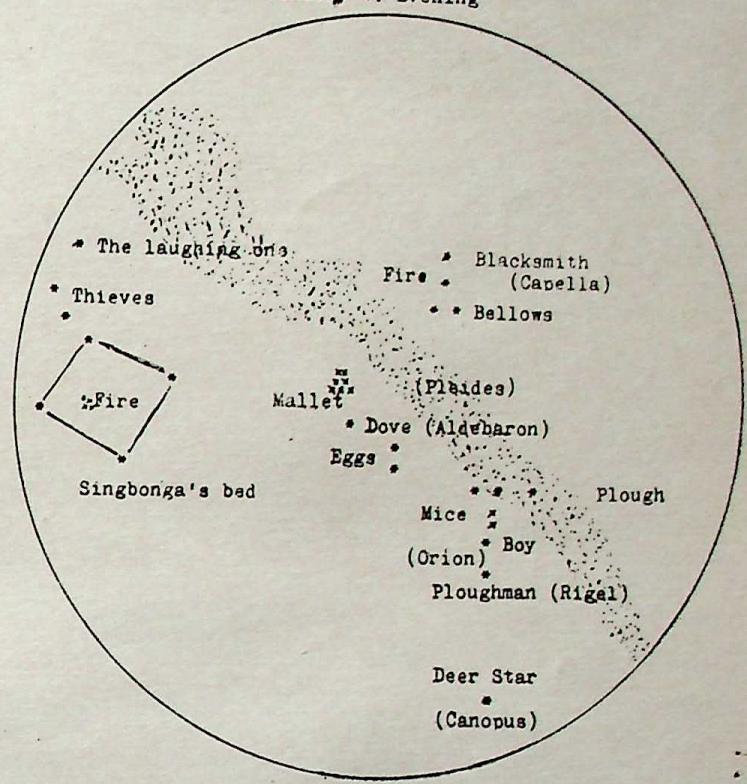
With the night came the moon. With the moon the stars. For the Adivasis the stars are the children of the moon. Before the moon and her children existed there were stars far brighter than the ones we now see for they were the children of the sun. Like the sun they shone bright and dazzling. Like their father they radiated heat. Jealousy prompted the moon to trick the sun into believing that she had killed her children and had served them up in a stew for her guest, the sun.

The moon further suggested that the sun does likewise with the children of his own begetting. They would make as tasty a stew. Gluttony has been the ruin of many. It was the end of the children of the sun. The only stars left for us were the children of the moon.

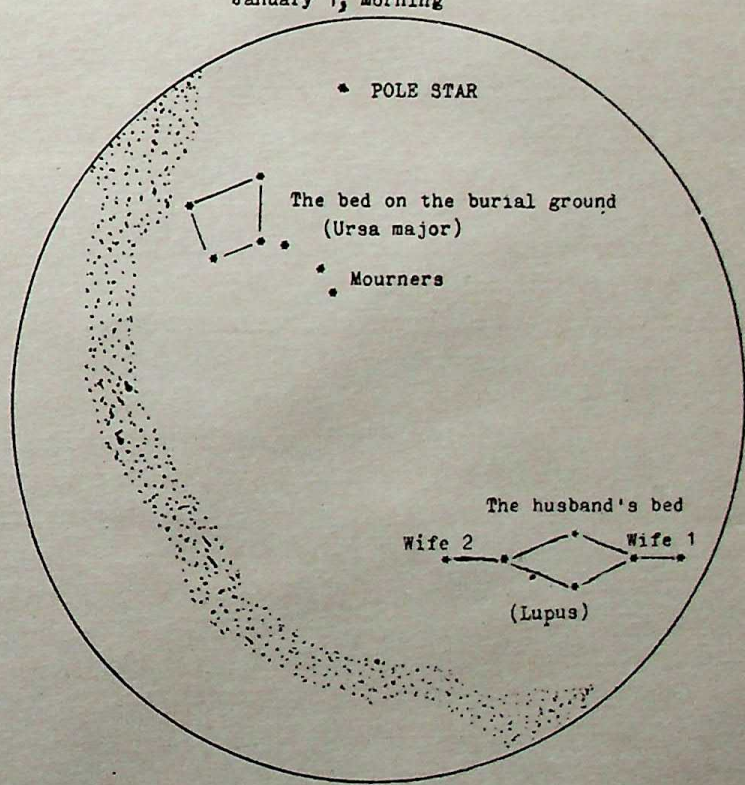
Like the people who conceived them the sun and moon never really enjoy a life of unbroken prosperity. They have their lean years, they are forced to take

THE STARS IN THE TRIBAL FIRMAMENT

January 1. Evening



January 1, Morning



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Tribals of Chota Nagpur

loans, to fall into debt. They are harassed by their creditors. They are brought before the village "panchayat". When this council of village elders foregather they are seen in a halo round the sun or moon. When the creditors insist on prompt payment even to the extent of clapping them in prison—there is an eclipse.

During an eclipse the Adivasis hasten to the rescue of the debtor. Out go their pots and pans of brass, their weapons of the chase, their implements of agriculture, their paddy, their valuables. Strewn in the courtyard these lie for the sun and moon to see and choose what is necessary to redeem their debt. Hence the cries and shouts that attend all eclipses in this country—necessary accompaniment to all good bargains.

Some others among the Tribals attribute an eclipse to the work of a jackal swallowing the sun or moon. For them the halo is a ring of plaited straw used for carrying water-pots on the head by tribal women.

The Adivasis are not interested in the stars for the reason that the stars have no direct bearing on their lives. Their destinies are ruled by the very concrete happenings of every day, by hard work in field and by where lie their true interests. The stars are too far away to direct their lives.

Horoscopes are unkown to the Tribals. The future is too vague to worry about, the present too absorbing to give up for shadowy promises. Singbonga did well to put the Adivasis to bed. Even now they try to filch the small hours before dawn to graze their cattle. And so it is that they are familiar with the stars of early morning. They have no time to stand enthralled under the starry canopy of night. Their day ends with the setting sun. When the drums and cymbals call them to groves of Sal, and the dancing square of the village resounds with song, the thrill of the moment is too absorbing to exchange for the contemplation of the heavens.

There are exceptions to this want of interest in the stars. For hunters the "*jilu ating ipil*"—the star under which the deer graze", known to the west as Canopus, is an indication of game. The Mundas hold that deer only graze for just as long as this star remains above the horizon.

Comets for the Tribals, as for many other races, portend public calamities. The Adivasis call them "broom stars". The name is descriptive.

Singbonga lives in "the country beyond" but that does not mean that his life is any different from that of the Adivasis. He has his herd of cattle and his cowherd. Up in the heavens you can see "the way of the cows" cutting across the sky, in much the same way as the *gai chaur* runs through the village. If you wake up early in the morning you may just catch a glimpse of Lugu the cowherd taking Singbonga's cattle to pasture along "The Milky Way". Lugu is the Morning Star—any of the four planets that herald the dawn in turn—Mars, Saturn, Jupiter, Venus.

Singbonga made man. He did not stop here. He also

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made the first plough for man. The story of the plough is writ in the heavens as we record the great events of life in books. The sky is Singbonga's book. In it we read that whilst the Old One was busy with his mallet or "mugra" chiselling the first plough he saw a dove alighting on her nest. He could not resist throwing something at the bird. Away went his "mugra" to find a place for ever in the sky as the seven stars of the Pleiades. The dove took off in fright to become Aldebaron in Taurus. Her two eggs are stars north of the dove. The plough is located in the star Rigel in Orion. This is the legend they tell in Biru, the land of low hills on the southern rim of the Chota Nagpur plateau.

The Mundas of the central plateau leave Singbonga out of the picture. It was a man who was ploughing. His son was with him. As often happens the plough turned up a nest of field mice. Off went the boy after the scurrying "beasties" to spit two of them. The ploughman stopped to take in the scene and spotted a brooding dove. He threw his mallet which happened to be at hand at the time.

As in the southern legend the mallet or "mugra" came to rest in the Pleiades, with the dove in Aldebaron and the two eggs remaining still in the north, close to the dove. The ploughman, the Mundas find back in the star Rigel, his plough in Orion's Belt. The middle star represents the yoke, the two other stars his team of bullocks. Two stars in Orion's Dagger recall the mice, whilst the boy finds his place at the tip of the blade.

Singbonga put man to bed. He was sorry for man but also because he himself finds the need of rest. Like the Adivasis Singbonga sleeps on a string bed—the "khati" of the Tribals. For the Old One this bed is immense, too big for the earth, that is why we see it in the heavens.

The "khati pawa" or four legs of Singbonga's great bed are the stars Scheat, Markab, Algenib in Pegasus, and Alpharet in Andromeda. For additional warmth at night the Adivasis often use a "tawa" or shallow tray of glowing embers under their string beds. Singbonga has his bed-warmer, "the fire stars" the Adivasis call them, towards the middle of the bed.

To the west of the big bed are the "two fire thieves" Lambda and Iota. Delta in Cygnus is known to the Tribals as the "one who cannot stop laughing" —at the idea, most probably, of the two thieves wanting to steal Singbonga's fire!

There is a smaller bed in the sky belonging to the man who, the story runs, had two wives whom he could not manage! Both wanted the upper hand and started pulling the bed to pieces. The Adivasis locate this shapeless bed in Lupus to the South-East of the Southern Cross. At the eastern and western points of the bed are two stars—the two wives. Delta in Centaurus is nearer—the first wife. Delta in Norma the second who has lost the struggle is farther away.

The "khati" or string bed of the Adivasis also serves as a bier which is abandoned in the graveyard after the burial. Such a bier is the quadrilateral formed by the stars Dubhe, Merak, Phecda and Megrez, in "the Great Bear". The two nearest stars in the tail—Alioth and Mizar—recall the mourners. These six stars are known as "the bed stars of the burial ground."

In the Charioteer of the western astronomers—

Chota Nagpur landscape

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Winnowing paddy

Auriga—the Mundas see a likeness to their village blacksmith. Capella being the smith, the Kids the fire in the forge. The double bellows worked by the feet of the smith's wife is the isosceles triangle with Epsilon at the apex.

A touch of astrology borrowed from their Hindu neighbours appears in the story the Mundas tell of the planet Venus, known to them as Sukura. Any other planet that approaches towards Venus is known as Sukrain. When these two come close together the month of the occurrence and even the year spells favourable marriages.

Elsewhere in Chota Nagpur Sukrain is taken to be the mother of Sukura. There was a time when Sukura was on the point of being married. The bride's party had already come to fetch him. They had left with Sukura and had come to the borders of the bridegroom's village.

At the limits of the village, as Tribal custom demands, the procession stopped to let the bridegroom solemnly promise that he would take proper care of his parents. Sukrain had misgivings about her boy. She made a last bid for home to indulge in what she took to be her final decent meal. The marriage party waited in vain for her return. Sukura went to see what was wrong. Expressing his astonishment at finding his mother eating when custom demanded that she fast, the old lady, without much ado, tod him of her fears for the future. Sukura moved to pity opted to remain a bachelor all his days.

The heavenly body that matters most to the Tribals is the sun. Some have tried to credit the sun as the supreme diety of the Adivasis. For the Mundas "Singi" is the sun, Singbonga the name set aside for the supreme god of the tribe. It is he who commands the sun in the legends of the tribe. For the Uraons the supreme god is called Dharmes, a being so high as to care little for the things of this earth. The Uraon word for sun is Biri. For the Kharrias the sun is Bero, its rays "giring". Sacrifices used to be offered to the "Giring-Lerand"—the sun's rays and the moon—not to the sun as such. The Kharria have a name for their supreme being—Bhagwan.

None of the three chief tribes of the Chota Nagpur plateau mentions the origin of the sun in their legend. It is taken for granted as someone or something that obeys the voice of Singbonga as do the moon and the stars, for the service of man.

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